6/1/83 K.3

Remedial Action Master Plan

Old Mill, OH

HAZARDOUS
SITE CONTROL
DIVISION

Remedial Planning/ Field Investigation Team (REM/FIT)

ZONE II

CONTRACT NO.
68-01-6692

CH2M HILL
Ecology &
Environment

11535?

6/1/83 K-3

REMEDIAL ACTION MASTER PLAN

OLD MILL SITE

01-5V25.0

June 1, 1983

001311

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OLD MILL SITE
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1.0 EXECUTIVE SUMMARY

This document is a Remedial Action Master Plan (RAMP) for the Old Mill site (formerly known as the Jack Webb site and Rock Creek site) in Rock Creek, Ohio.

A RAMP is a plan for undertaking a remedial investigation/ feasibility study (RI/FS) and remedial actions in response to a hazardous substance release, or a substantial threat of release, into the environment. It is based on the National Oil and Hazardous Substances Contingency Plan promulgated by the Environmental Protection Agency (EPA) on July 16, 1982, (47 FR 31180-31243). Remedial response actions are authorized by CERCLA and must be performed according to the criteria in the National Contingency Plan (NCP).

1.1 PURPOSE OF THE REPORT

The specific purpose of this RAMP is to identify and describe the scope of a RI/FS, to discuss remedial actions, and to provide a preliminary schedule of implementation. This RAMP is based on available data only. The RAMP provides Order-of-Magnitude cost estimates for each proposed RI/FS activity, identifies data limitations, and presents community relations strategies.

1.2 SITE DESCRIPTION

The Old Mill site is in the Village of Rock Creek, Ashtabula County, Ohio. The Old Mill site consists of two separate parcels, the Kraus property and the Henfield property. In the past, the Kraus property has been called the Kraus site and the Henfield property has been called the Jack Webb site. In this RAMP, the term Old Mill site includes both properties. Where necessary, specific properties will be referenced as either the Kraus or Henfield property.

The Henfield property is bounded by Station Street on the north, Mechanic Street on the east, an abandoned section of Penn Central Railroad on the west, and property owned by Rock Creek Aluminum Company on the south.

The Kraus property is located northwest of the Henfield property, across Station Street. In addition to property owned by Kraus, land owned by the Penn Central Railroad north to Station Street was affected by hazardous waste activities. The boundary between these properties is not distinct. For this RAMP, all of the area north of Station Street will be called the Kraus property, although some of this land is Penn Central right-of-way.

The area around the Village of Rock Creek and the Old Mill site is rural. The site is approximately 100 feet from five

houses located across Mechanic Street toward the east. A small grade school is about one-half mile from the site.

The Henfield property is abandoned and includes four dilapidated wooden buildings and four concrete silos. All known waste drums have been removed. Drainage is discharged from the southwest corner of the site and is unobstructed. The site is inadequately fenced and public access is only partially restricted.

The Kraus property is presently partially covered with piles of railroad ballast dumped generally north and west of an area formerly used for open waste burning. Two (approximately 1,000- and 2,000-gallon) tanks lie abandoned on the property. Contents of the tanks are unknown but suspected to be crude oil and/or brine. All waste-bearing drums have been removed, but several empty drums remain on the property. No obvious significant contamination can be seen on the ground. The Kraus property is not fenced and public access is unrestricted.

1.3 LIMITATIONS

The data and study limitations below are considered relevant to the RAMP process for the Old Mill site.

1.3.1 Data Limitations

These data limitations were noted in the development of this RAMP for the Old Mill site:

- Groundwater monitoring onsite and offsite is very limited.
- Data on near surface geology and confining layer(s) is limited.
- Data on the extent and characterization of site runoff contamination in the drainage culvert, near the east and west ends of the conduit, and downstream of the small stream west of the site is limited.
- Data on buried drums is limited to a series of test pits at the Kraus property.
- Data on potential public water supply contamination or cross contamination is limited.

A brief summary of the additional data required for remedial action evaluations is:

- Topographic and mapping data.

- Surface and more detailed subsurface soil sampling and analysis.

- Hydrogeologic study to define subsurface soils, groundwater location and movement, and groundwater contamination (if any).

- A survey to locate buried drums (if any).

- Sampling and analysis of runoff stream water and sediment.

1.3.2 Study Limitations

- This RAMP does not recommend specific source control or offsite remedial actions because of a lack of information necessary to conduct a RI/FS for such remedial actions.

- Costs provided are Order-of-Magnitude only.

- This RAMP is basically a planning document with tasks and subtasks suggested as minimum efforts to accomplish the RI/FS.

- The RAMP budget and development schedule did not permit a complete and exhaustive consideration of all remedial planning activities.

1.4 INITIAL REMEDIAL MEASURES

The purpose of initial remedial measures (IRM's), as described in 40 CRF 300.68(c)(1), is to reduce imminent hazards to public health or the environment. IRM's are considered necessary on the Henfield property to reduce the potential of possible direct contact with the contaminated soils and contaminated runoff. Although the Superfund cleanup conducted in 1982 resulted in a significant reduction in the hazards at the Old Mill site, health hazards still remain, as described in the memorandum from Georgi Jones, Department of Health and Human Services, dated January 14, 1983.

Two "baseline" IRM's have been identified to reduce the potential for further public exposure. These are:

- Fencing of the Henfield property
- Installation of warning signs along the fencing

Implementation of these measures will result in a reduction of hazards and public exposure potential until the RI/FS can be completed and remedial actions can be selected which will mitigate the existing hazards.

One "advanced" IRM has been identified as a potential action at the Old Mill site. Since there is known soil contamination at the Henfield property, removal of the contaminated soil may be a cost-effective advanced IRM. Soil removal will reduce the hazard of public exposure to contamination onsite and reduce further groundwater contamination caused by precipitation percolation through the contaminated soils.

The recommendation to study the soil removal advanced IRM will be made immediately after the results of the onsite soil sampling are reviewed. If significant soil contamination is found and located, the advanced IRM will be recommended. The advanced IRM activity will begin with a "focused" RI/FS to evaluate the soil removal options. If determined to be cost-effective in the focused RI/FS, a contractor will be selected and the soil removed. The removal of contaminated soil from the site can be "fast tracked" as necessary.

1.5 REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Before alternatives for remedial actions can be considered, sufficient data and information must be available to develop, screen, and evaluate those alternatives. Work efforts to gather these data and information are called a RI/FS.

RI/FS tasks are structured to accomplish one or more of the following objectives:

- Determine if the site poses an imminent health hazard or environmental problem.
- Determine the nature and extent of contamination at the site.
- Define the pathways of migration from the site as well as the impact of contaminants on potential receptors.
- Define onsite physical features and facilities that could affect contaminant migration, containment, or cleanup.
- Evaluate the specific hazards present at the site based on data from remedial investigations.
- Develop viable remedial action alternatives.
- Evaluate remedial action alternatives.
- Recommend cost-effective remedial actions for the sites.

- Prepare a conceptual design of the recommended remedial actions.

The scope of work for the RI/FS includes nine general activities, each having several defined tasks. These activities are:

- Activity 1 - Preparation of work plan
- Activity 2 - Site definition activities
- Activity 3 - Detailed site characterization studies
- Activity 4 - Site evaluation
- Activity 5 - Remedial investigation report
- Activity 6 - Evaluation of remedial action alternatives
- Activity 7 - Alternative remedial action feasibility report
- Activity 8 - Conceptual design
- Activity 9 - Project management

1.5.1 Preparation of Work Plan

Task 1-1 - Site Health and Safety Plan

The objective is to review the available data to determine if there are areas within the site that could cause potential chemical exposure hazards during remedial investigation activities. All available site information will be reviewed.

Task 1-2 - Prepare Work Plan

The work plan will set detailed project objectives, tasks and schedule for the RI/FS. This includes the development of a quality assurance plan.

1.5.2 Site Definition Activities

Task 2-1 - Geophysical Surveys

A survey of the Old Mill site, including both the Henfield and Kraus properties, should be conducted to determine the subsurface geological features onsite.

Task 2-2 - Topographic Survey

A topographic map of the Old Mill site with elevations and locations of all pertinent physical features will be needed for development, screening and selection, as well as the final design of the remedial actions.

Task 2-3 - Site Safety Facilities

The requirements for site safety and decontamination facilities needed for RI/FS activities will be determined. It is assumed in this RAMP that Level D protection will be used for all onsite activities.

Task 2-4 - Gather Additional Data

From the files reviewed, it appeared that additional data on the Old Mill site may be available. This task includes an effort to gather and evaluate these data as needed.

1.5.3 Detailed Site Characterization Studies

Task 3-1 - Sampling and Analysis of Soil

Data will be collected on the depth, areal extent, and concentration of hazardous constituents in soil both on and offsite at the Old Mill site. Existing data on surface soil are valuable and will be used to guide limited additional surface sampling as well as more extensive subsurface sampling and analysis.

Task 3-2 - Installation of Groundwater Monitoring Wells

Monitoring wells will be installed to determine the presence, horizontal and vertical extent of any groundwater contamination, the gradient and piezometric surface and the direction of groundwater flow at the Old Mill site and surrounding area.

Task 3-3 - Sampling and Analysis of Groundwater, 1st and 2nd Quarters

Groundwater from the monitoring wells will be sampled and analyzed for the routine inorganic and organic constituents determined by the Contract Laboratory Program (CLP). Sampling analysis is included for 2 quarters (See optional Task 3-8).

Task 3-4 - Sampling and Analysis of Private Water Supplies and Sumps

The objective of sampling and analyzing water from private water supplies is to collect data on the possible contamination of private wells and sumps by wastes previously stored on the Old Mill site. Existing data will be used as a guide to select specific wells and sumps for continued analysis.

Task 3-5 - Sampling and Analysis of Henfield Property Drainage Stream Sediment

The objective of this task is to determine if the water and

sediments in the small drainage stream which discharges from the southwest corner of the Henfield property are contaminated by wastes from the site. If contamination is shown, then the extent of contaminated sediments downstream will be determined.

Task 3-6 - Sampling and Analysis of Kraus Property Drainage Stream Sediments

The objective of this task is to determine if the water and sediments in the stream which receives drainage from the Kraus property are contaminated by wastes previously stored at the site.

In addition to the tasks described above, two additional investigative tasks were identified as possible for the Old Mill site. These tasks are described as "optional" depending upon the results of Tasks 3-1 through 3-6. The estimated costs for these tasks are included in the cost summary table as distinct items with subtotals shown separately.

Task 3-7 - Sampling and Analysis of Private Water Supplies for PAH Compounds (Optional)

The objective of sampling and analyzing water from private water supplies, especially for PAH compounds, is to determine the existence of a potential hazard to the public from PAH compounds in drinking water. Private wells and sumps will be sampled as well as the public water supply. PAH compounds will be determined by GC/MS techniques with an average method detection limit of less than 5 ng/l (nanograms per liter).

Task 3-8 - Sampling and Analysis of Groundwater, 3rd and 4th Quarters (Optional)

Similar scope of Task 3-3, performed as necessary to characterize the groundwater quality at the site.

1.5.4 Site Evaluation

All data collected and summarized during the remedial investigation tasks will be evaluated to determine whether or not a hazard to human health or welfare or to the environment exists.

1.5.5 Remedial Investigation Report

All data collected and summarized in the various technical memorandums prepared during remedial investigations will be combined in a final report.

1.5.6 Evaluation of Remedial Action Alternatives

During this activity, alternative remedial actions will be evaluated on the basis of economic, environmental, and engineering criteria. An alternative or combination of alternatives will be selected for conceptual design and implementation.

1.5.7 Alternative Remedial Actions Feasibility Report

A report summarizing data developed during the evaluation of alternatives and documenting the alternative remedial actions assessment process will be prepared. On the basis of the entire evaluation process, one alternative or a combination of alternatives will be recommended for consideration in the conceptual design.

1.5.8 Conceptual Design

The objective of this activity will be to prepare a conceptual design consistent with the objectives of the proposed remedial actions, and sufficient to prepare an Order-of-Magnitude level cost estimate.

1.5.9 Project Management

This activity occurs throughout the RI/FS. General tasks during this activity include establishment of project records; review meetings with U.S. and Ohio EPA; preparation of monthly reports; ongoing monitoring of staffing, budgets, and contractor performance; and maintaining quality assurance programs.

1.6 COST ESTIMATE AND SCHEDULE

Order-of-Magnitude cost estimates for the IRM's and the RI/FS are shown in Tables 1-1 and 1-2, respectively.

Schedules for the IRM's and the RI/FS are shown in Figures 1-1 and 1-2, respectively. The task descriptions in Section 3 for the IRM's and RI/FS provide the basis for each associated cost range.

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Table 1-1
ORDER-OF-MAGNITUDE COST ESTIMATE OF
BASELINE INITIAL REMEDIAL MEASURES
OLD MILL SITE
Rock Creek, Ohio
W65125.00

Initial Remedial Measure	Estimated Cost Ranges	
	Low	High
1. Fencing	$12,560	$19,700
2. Warning Signs	600	1,000
	$13,160	$20,700

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Table 1-2 (page 1 of 3)
COST ESTIMATES FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE
W65125.00

Activity	LOW COST ESTIMATES $Engineering	LOW COST ESTIMATES $Expense	LOW COST ESTIMATES $Subcontract	HIGH COST ESTIMATES $Engineering	HIGH COST ESTIMATES $Expense	HIGH COST ESTIMATES $Subcontract	RANGE OF TOTAL COST ESTIMATES $ Low	RANGE OF TOTAL COST ESTIMATES $ High
1.0 PREPARATION OF WORK PLAN								
1-1 Site Health and Safety Plan	1,470	270	1,000	2,200	460	1,500	2,740	4,160
1-2 Prepare Work Plan	6,100	640	-	9,150	960	-	6,740	10,110
Subtotal	7,570	910	1,000	11,350	1,420	1,500	9,480	14,270
2.0 SITE DEFINITION ACTIVITIES								
2-1 Geophysical Survey	7,480	1,650	8,400	11,220	2,480	12,600	17,530	26,300
2-2 Topographic Survey	4,950	500	14,700	7,430	750	20,000	20,150	28,180
2-3 Gather Additional Data	6,050	440	-	9,080	660	-	6,490	9,740
Subtotal	18,480	2,590	23,100	27,730	3,890	32,600	44,170	64,220
3.0 DETAILED SITE CHARACTERIZATION								
3-1 Sampling and Analysis of Soil	10,100	3,410	45,450[a]	15,000	5,120	68,000[a]	58,960	88,120
3-2 Installation of Groundwater Monitoring Wells	9,950	3,400	18,600	14,930	5,100	27,900	31,950	47,930
3-3 Sampling and Analysis of Groundwater, 1st and 2nd Quarter	25,500	9,300	45,360[a]	38,250	13,950	68,040[a]	80,160	120,240
3-4 Sampling and Analysis of Private Water Supplies and Sumps	6,400	1,980	13,400[a]	9,600	2,970	20,100[a]	21,780	32,670

Table 1-2 (page 2 of 3)
COST ESTIMATES FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE

Activity	LOW COST ESTIMATES $Engineering	LOW COST ESTIMATES $Expense	LOW COST ESTIMATES $Subcontract	HIGH COST ESTIMATES $Engineering	HIGH COST ESTIMATES $Expense	HIGH COST ESTIMATES $Subcontract	RANGE OF TOTAL COST ESTIMATES $ Low	RANGE OF TOTAL COST ESTIMATES $ High
3-5 Sampling and Analysis of Henfield and Kraus Property & 3-6 Drainage Stream Sediment	13,240	2,590	28,850[a] 5,640	19,860	3,890	43,300[a] 8,460	50,320	75,510
3-7 Sampling and Analysis of Private Wells for PAH Compounds (Optional)	3,000[d]	1,100[d]	6,300[a,d]	4,500[d]	1,650[d]	9,450[a,d]	10,400[d]	15,600[d]
3-8 Sampling and Analysis of Groundwater, 3rd and 4th Quarters (Optional)	25,500[d]	9,300[d]	45,360[a,d]	38,250[d]	13,950[d]	68,040[a,d]	80,160[d]	120,240[d]
Subtotal	65,190[b] 28,500[e]	20,680[b] 10,400[e]	157,300[b] 24,240[c] 51,660[e]	97,640[b] 42,750[e]	31,030[b] 15,600[e]	235,800[b] 36,360[c] 77,490[e]	243,170[b] 110,110[c] 90,560[e]	364,470[b] 165,030[c] 135,840[e]
4.0 SITE EVALUATION	11,000	550	-	16,500	830	-	11,550	17,330
5.0 REMEDIAL INVESTIGATION REPORT	12,600	2,830	-	18,900	4,250	-	15,430	23,150
6.0 EVALUATION OF REMEDIAL ACTION ALTERNATIVES	23,260	2,550	6,000	34,890	3,850	7,500	31,810	46,240
7.0 ALTERNATIVE REMEDIAL ACTIONS FEASIBILITY REPORT	13,230	1,760	-	19,850	2,640	-	14,990	22,490

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Table 1-2 (page 3 of 3)
COST ESTIMATES FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE

Activity	LOW COST ESTIMATES $Engineering	LOW COST ESTIMATES $Expense	LOW COST ESTIMATES $Subcontract	HIGH COST ESTIMATES $Engineering	HIGH COST ESTIMATES $Expense	HIGH COST ESTIMATES $Subcontract	RANGE OF TOTAL COST ESTIMATES $ Low	RANGE OF TOTAL COST ESTIMATES $ High
8.0 CONCEPTUAL DESIGN	10,500	1,300	-	15,750	1,950	-	11,800	17,700
9.0 PROJECT MANAGEMENT	13,900	750	-	20,850	1,130	-	14,650	21,980
TOTAL	175,730	33,920	187,400[b]	263,460	50,990	277,400[b]	397,050[b]	591,850[b]
			54,340[c]			77,960[c]	263,990[c]	392,410[c]
	28,500[e]	10,400[e]	51,660[e]	42,750[e]	15,600[e]	77,490[e]	90,560[e]	135,840[e]

NOTES:

[a] EPA contract lab cost estimate.
[b] Includes sample analysis at EPA contract lab.
[c] Cost not including sample analysis.
[d] Optional task cost.
[e] Total of optional site characterization activities.

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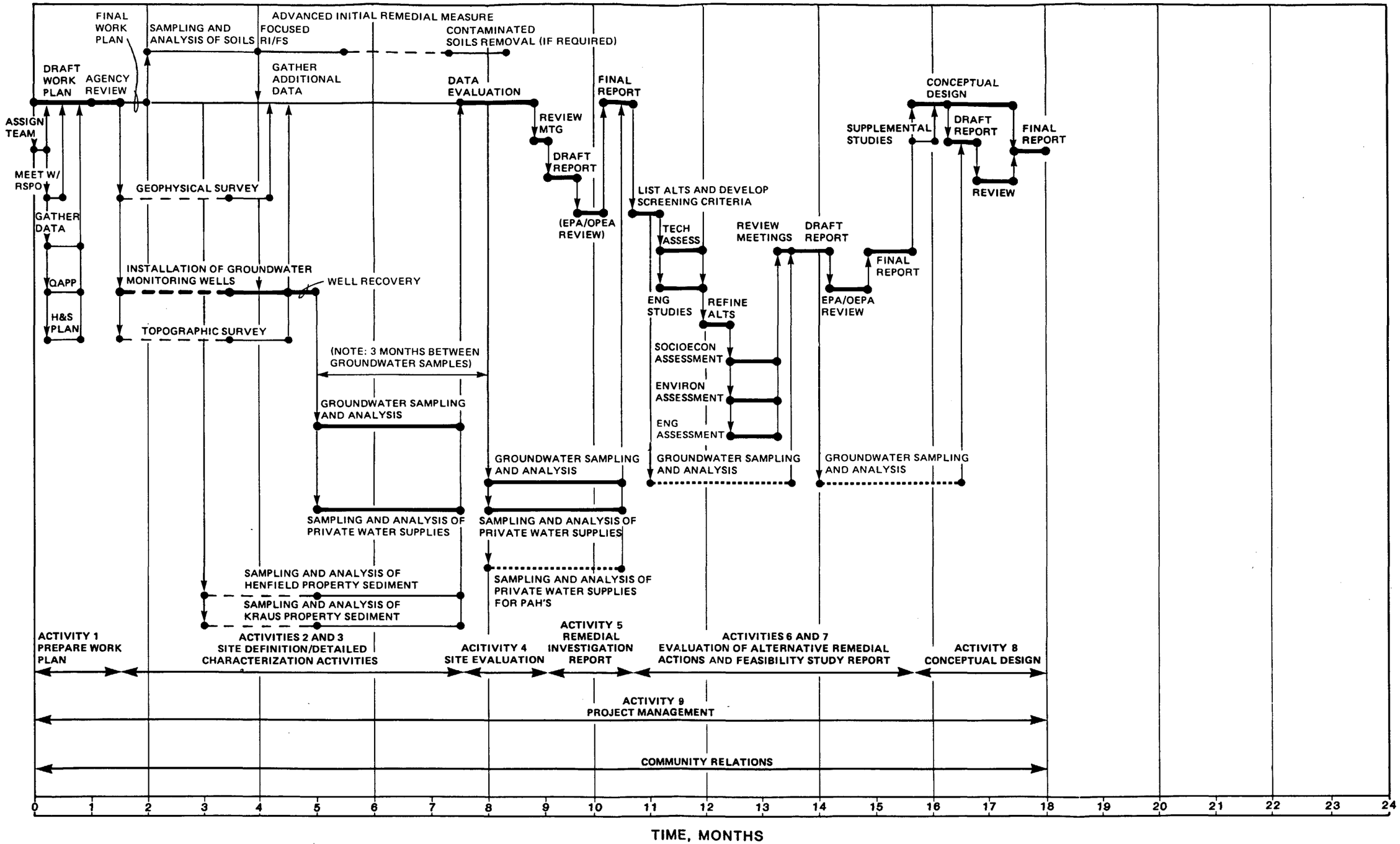

FIGURE 1-2
APPROXIMATE SCHEDULE FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE

Figure 1-1
SCHEDULE OF BASELINE INITIAL REMEDIAL MEASURES[a]
OLD MILL SITE
W65125.00

Initial Remedial Measure	Schedule (weeks)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Fencing																				
o Prepare Contract Documents and Select Contractor	———	———	———	———	———	———														
o Install fencing							———	———												
2. Warning Signs								———	———											

[a] Based on earliest start time.

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2.0 DATA EVALUATION

2.1 OBJECTIVE

In this section, available technical and nontechnical information on the Old Mill site (formerly known as the Jack Webb site and the Rock Creek site) and the immediate surroundings is presented. Also summarized in this section are potential effects resulting from site contamination based on the available information.

2.2 BACKGROUND

2.2.1 Site Description

The Old Mill site is in the Village of Rock Creek, Ashtabula County, Ohio. A vicinity map is shown in Figure 2-1 and a location map is shown in Figure 2-2.

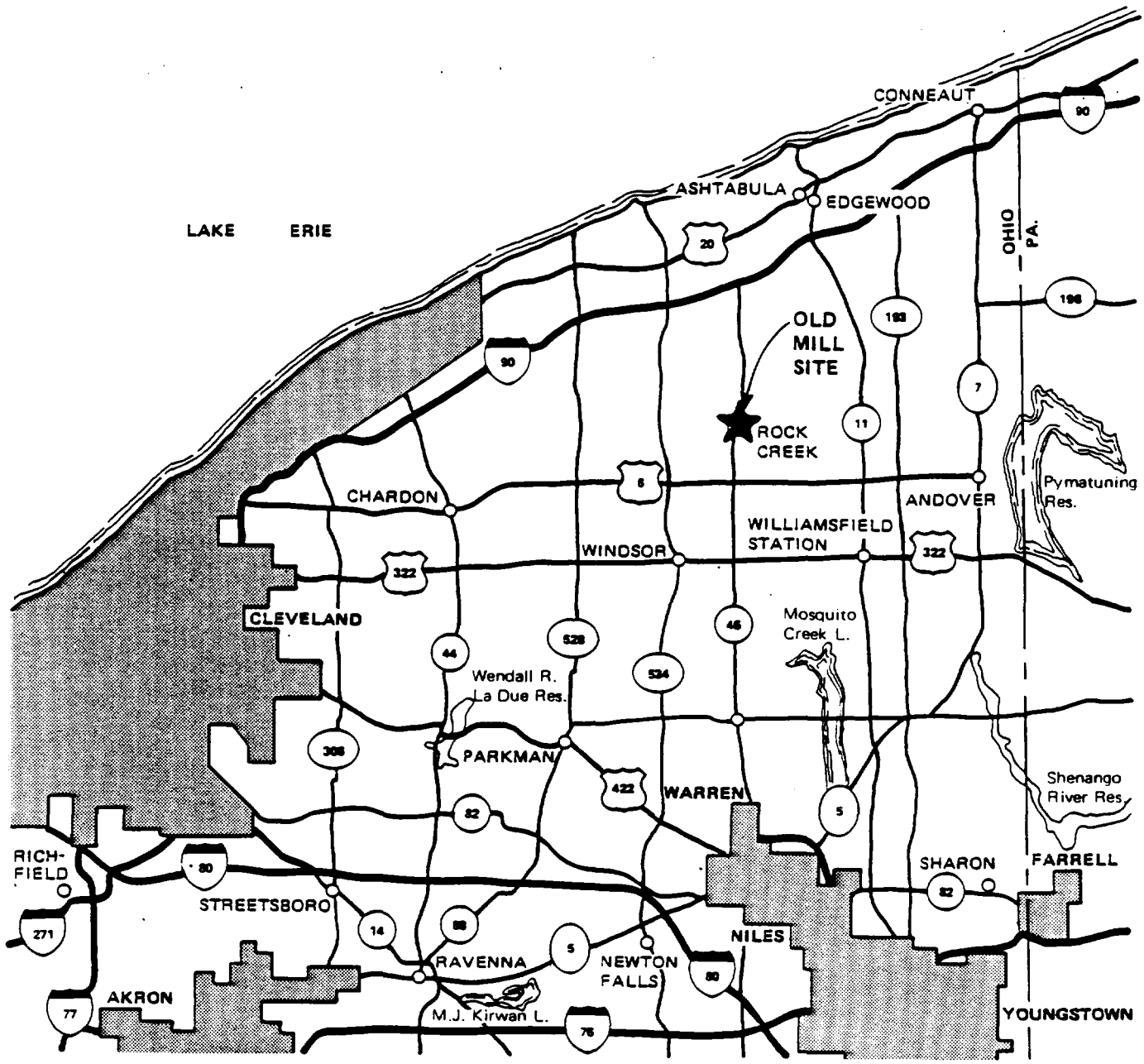
The site consists of two separate parcels, the Kraus property and the Henfield property, as shown in Figures 2-2 and 2-3. In the past, the Kraus property has been called the Kraus site and the Henfield property has been called the Jack Webb site. In this RAMP, the term Old Mill site includes both properties. Where necessary, specific properties will be referenced as either the Kraus or Henfield property.

The Henfield property is bounded by Station Street on the north, Mechanic Street on the east, an abandoned section of Penn Central Railroad on the west, and property owned by Rock Creek Aluminum Company on the south.

The Kraus property is northwest of the Henfield property, across Station Street. In addition to property owned by Kraus, land owned by the Penn Central Railroad north of Station Street was affected by past hazardous waste activities. The boundary between these properties is not distinct. For this RAMP, all of the area north of Station Street will be called the Kraus property, although some of this land is owned by Penn Central.

The area around the Village of Rock Creek and the Old Mill site is rural. The site is approximately 100 feet from five houses located across Mechanic Street toward the east. A small grade school is about one-half mile from the site.

The Henfield property is abandoned and includes four dilapidated wooden buildings and four concrete silos. All known waste drums have been removed. Drainage is discharged from the southwest corner of the site and is unobstructed. The site is inadequately fenced and public access is only partially restricted.



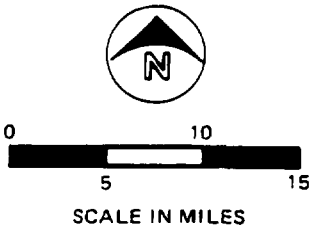
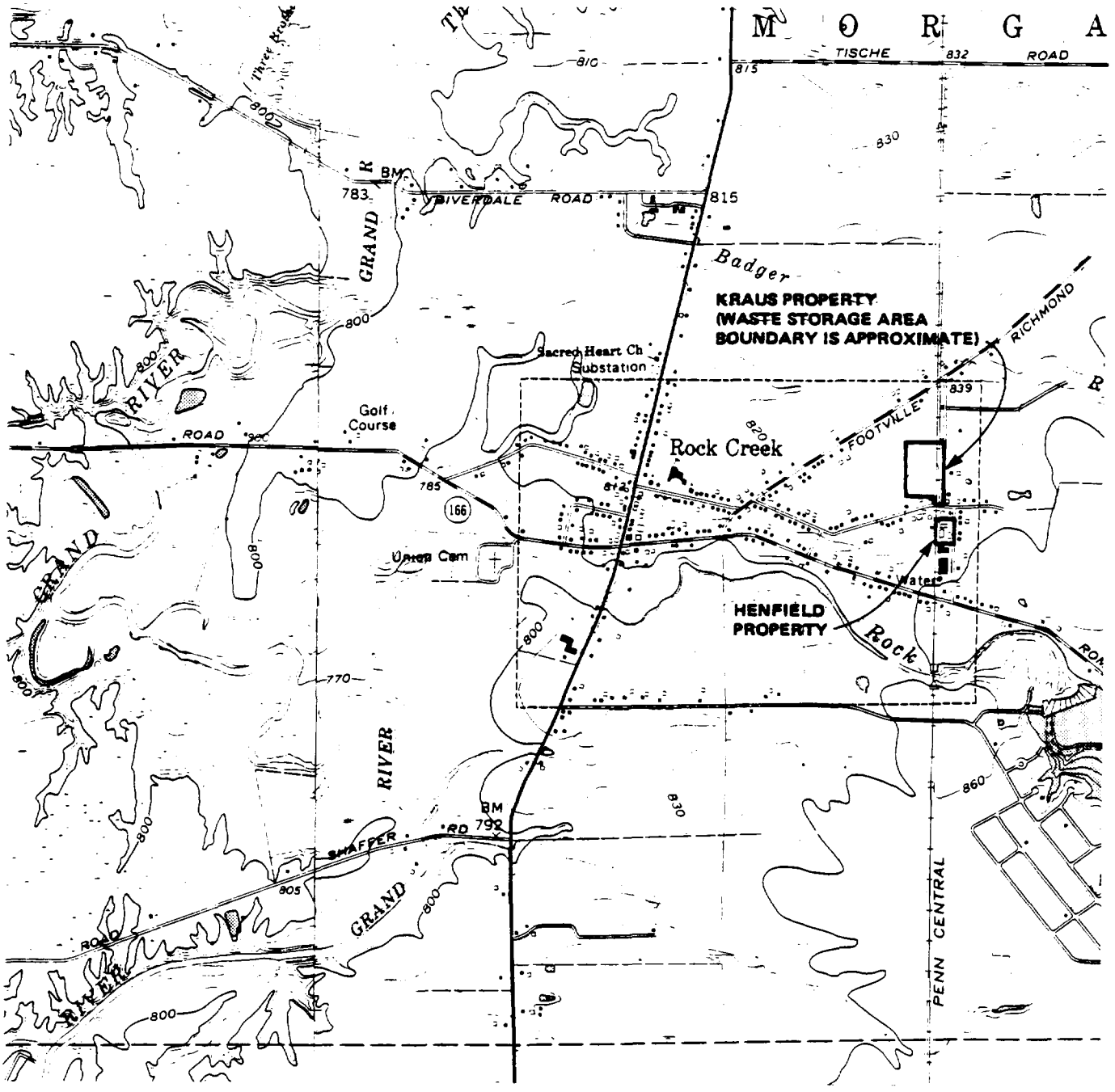


FIGURE 2-1
VICINITY MAP
OLD MILL SITE



SOURCE: USGS Maps, Jefferson and East Trumbull, Ohio. 1970.

FIGURE 2-2
LOCATION MAP
OLD MILL SITE

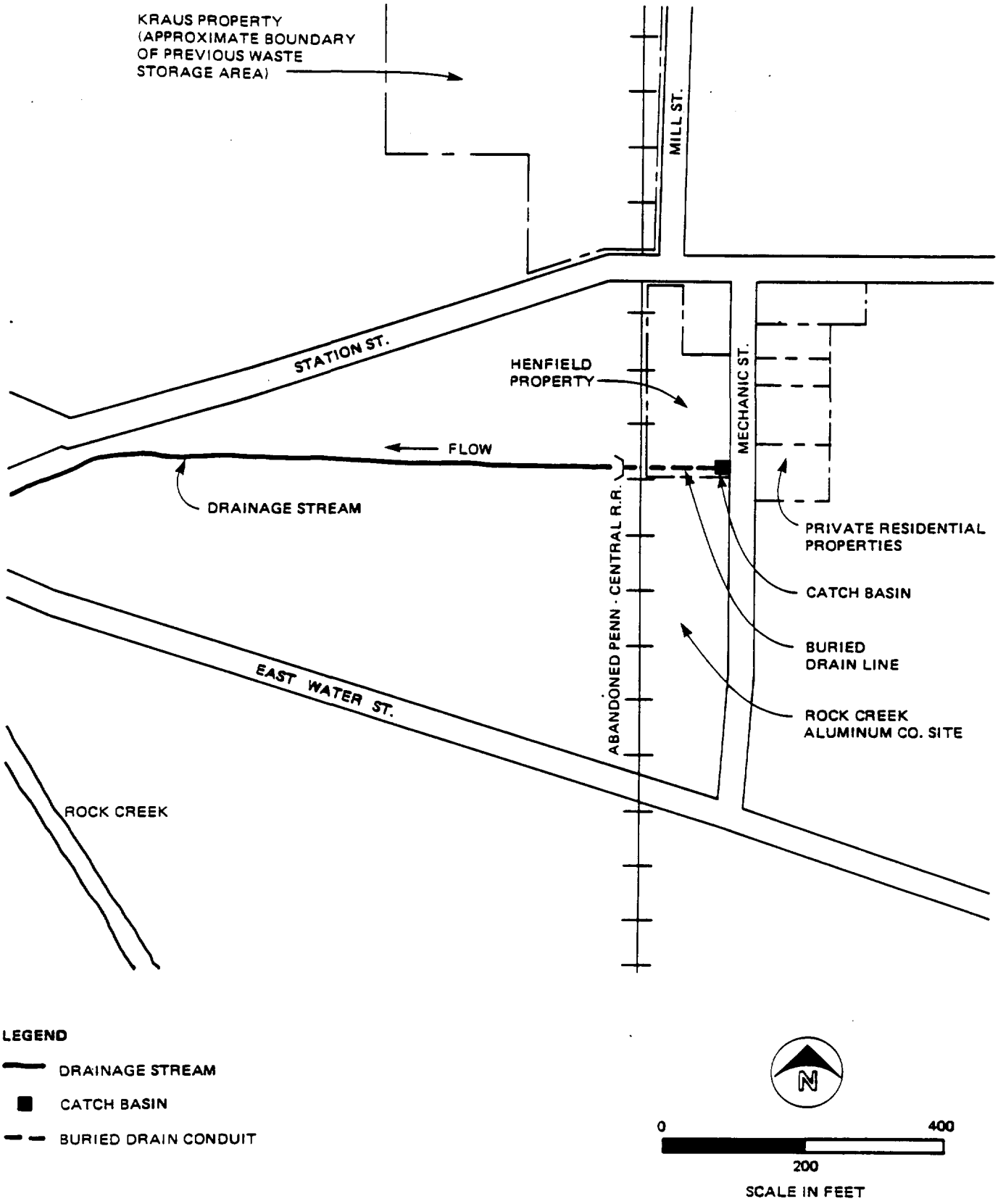


FIGURE 2-3
PARTIAL SITE PLAN
INCLUDING HENFIELD AND
KRAUS (PARTIAL) PROPERTY
OLD MILL SITE

The Kraus property is partially covered with piles of railroad ballast dumped generally north and west of an area reportedly used for open waste burning. Two (approximately 1,000- and 2,000-gallon) tanks lie abandoned on the property. Contents of the tanks are unknown but suspected to be crude oil and/or brine. All known waste-bearing drums have been removed, but several empty drums remain. No obvious significant contamination can be seen on the ground. The Kraus property is not fenced and public access is unrestricted.

2.2.2 Site History

Background

The Old Mill site first came to the attention of both the U.S. and Ohio EPA in the spring of 1979. At that time, waste drums were located on two parcels of land, the Henfield property on which a business was operating, and the Kraus property where drummed waste was stored with the owner's permission for the previously mentioned business. Early enforcement activity by U.S. and Ohio EPA caused the drums on the Kraus property to be removed. The drums were apparently transferred to the Henfield property. A total of approximately 1,200 drums were then stored on the Henfield property. The general locations of the drums on the Henfield property are shown in Figure 2-4.

The Henfield property is about 3 acres in area. It was occupied by a nursery, a potting soil firm and Rapco Foam (business unknown) in succession. As reported by Berg, Ohio EPA, three firms were responsible for the accumulation of drummed waste:

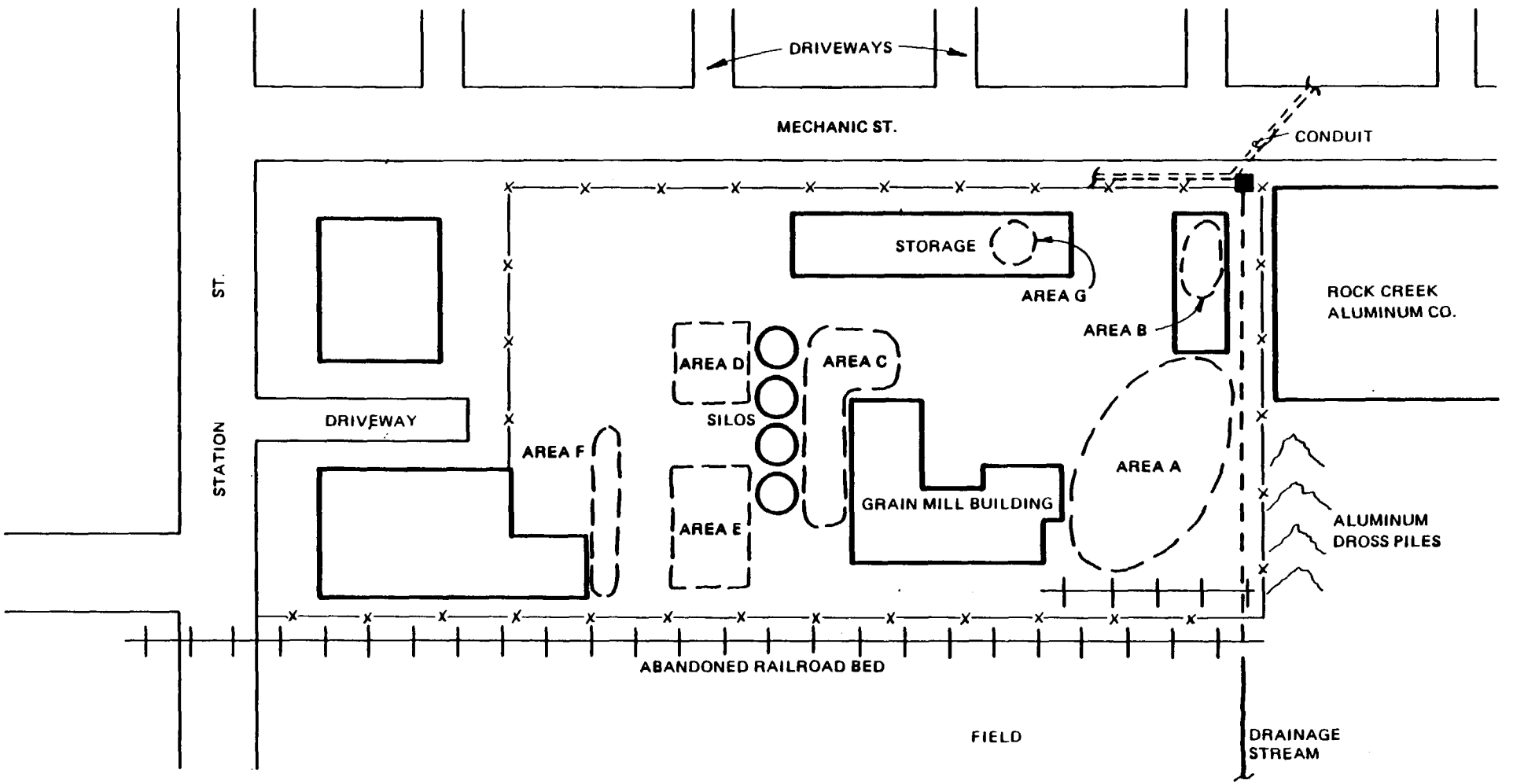
- Western Nurseries
  Property owned by Norrel E. Dearing;
  Jack Webb was an employee

- Hydrosoil
  Bought out Western Nurseries;
  Jack Webb was a corporate officer

- Rapco Foam
  Bought some of the "equipment and chemicals" from Hydrosoil when it went bankrupt

Reportedly, the potting soil firm intended to use some of the waste as a potting soil additive.

The Kraus property is approximately 10 acres in area. The land was used for storage of waste drums when storage room became inadequate at the Henfield property. In 1979, evidence of past open burning was reported by U.S. EPA inspectors. Charred soil and drums were observed. However, no information



LEGEND

×——× TEMPROARY FENCE

=== BURIED DRAIN CONDUIT

NOTE: Approximate number of drums, March 1, 1982.

AREA A	130
AREA B	60
AREA C	160
AREA D	170
AREA E	270
AREA F	35
AREA G	7

0 50 100

SCALE IN FEET

FIGURE 2-4
DRUM STORAGE LOCATIONS AT THE HENFIELD PROPERTY MARCH 1, 1982
OLD MILL SITE

or details on the burning have been available. Records on what was burned, how much, or when are not available. During cleanup operations, Joe Fredle, U.S. EPA OSC, was told about "rumors" of buried drums at the Kraus property. During immediate removal, initiated in November 1981 and completed November 1982, Fredle directed excavation of several test pits to locate drums, but none were found.

The initial RAMP site visit was conducted on February 24, 1983, by personnel from CH2M HILL and U.S. EPA. A site visit memorandum is attached to this RAMP as Appendix A.

Legal Actions

Legal actions regarding the Old Mill site consist of "demand letters" which have been sent to the three businesses responsible for receiving wastes, the Henfield property owner (actually, the bankrupt Henfield estate) and the Ashtabula County Septic and Waste Services, Inc. which was the major waste hauler delivering to the site. (A "demand letter" requires a responsible party to agree to clean up the site and specifies a time limit for a response.) Responses to the demand letters issued regarding the Old Mill site were minimal. The responsible parties who were issued demand letters did not assist or contribute to site cleanup actions.

Several waste generators who were identified by markings on waste drums removed their wastes without demand letters or any other legal actions.

At this time, no litigation is pending or in process regarding the Old Mill site. Legal actions may be initiated in the future to recover the Superfund monies spent for the immediate removal activities performed during late 1981 and 1982.

Health Hazards

During the time the Old Mill site contained the waste drums, health hazards consisted mainly of exposure to unknown organic liquids by physical contact and inhalation of unknown organic vapors offsite.

In addition to toxicity, the wastes also presented a serious fire hazard. Drum and spill sampling and analysis showed that most of the waste was flammable and could ignite readily. The fire hazard was made more serious by the dilapidated wooden buildings onsite. As reported by Fredle in Pollution Report (Polrep) 3, a fire at the Old Mill site could cause drums to catapult and thus spread a fire into the village itself. Fredle noted later in Polrep 12 that the smoke

and vapors from such a fire could also be very toxic.

Polrep 19 dated December 17, 1982, by Fredle, indicated the analysis of groundwater from private wells near the Old Mill site "did not show any indications of any significant contamination from the site." This conclusion was based on analysis of private well samples collected October 6 and November 17, 1982.

The first reported incident of acute health effects attributed to exposure to chemicals at the Old Mill area occurred at the Kraus property. The incident occurred during the first inspection of the site by U.S. EPA, Eastern District Office (EDO) personnel on June 18 and 19, 1979. The site inspection report of the Kraus property by Daniel C. Watson, U.S. EPA, EDO, et al., described the symptoms as:

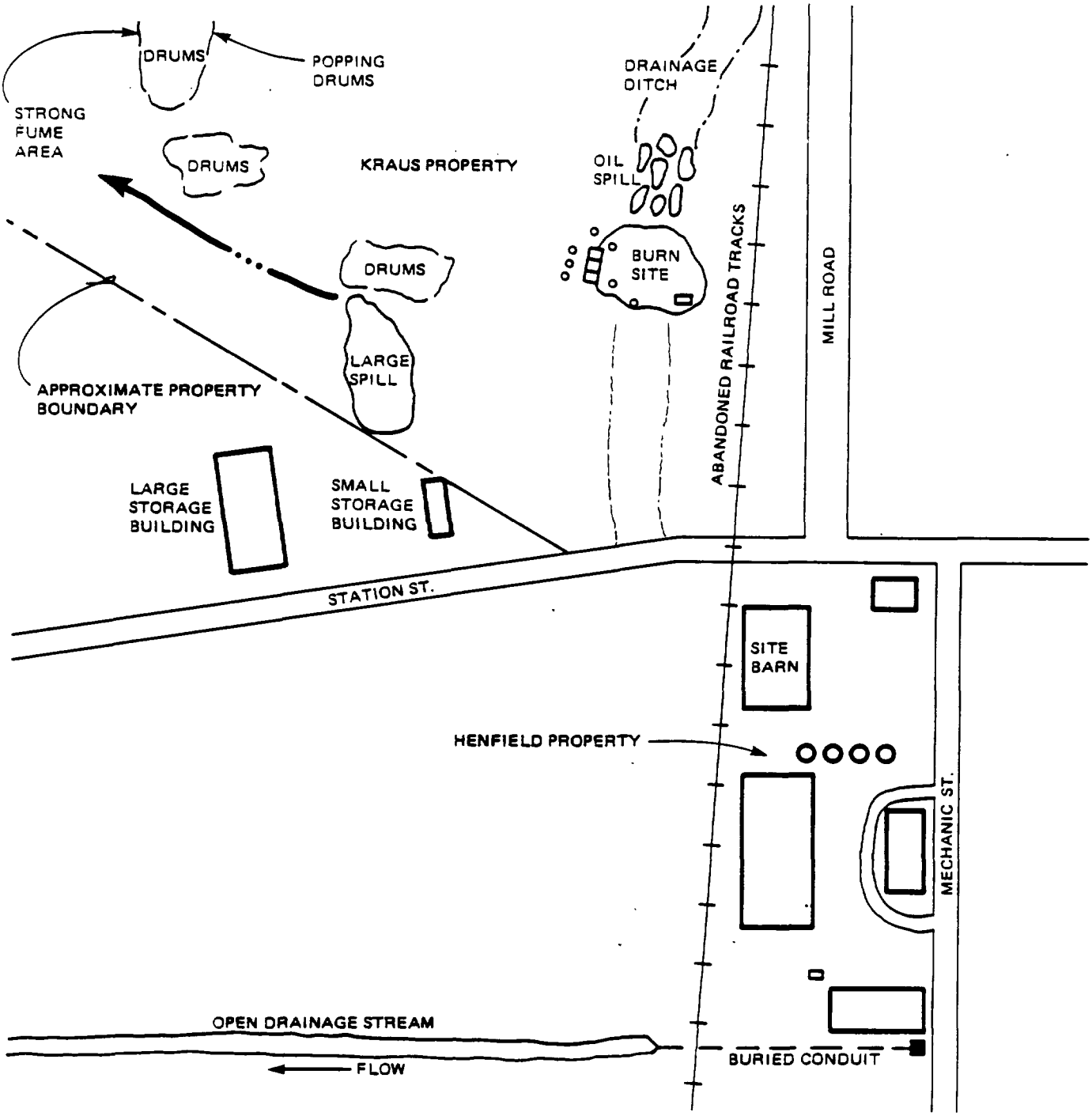
> "During both inspections, EDO personnel experienced an instant reaction to fumes coming from one of the areas. This reaction consisted of a headache, foul taste and numbness in the throat and mouth, a burning and aching in the eyes, nausea and light headedness. Twenty-four hours after being exposed to the fumes the symptoms persisted."

Approximate locations of the exposure incidents are shown in Figure 2-5.

Two additional incidents of acute health effects apparently caused by exposure to chemicals at the Kraus property occurred in 1982 and were reported by Fredle. On August 30, 1982, a sheriff's department deputy experienced eye irritation caused by vapors from a small amount of clear, molasses-like liquid in a drum he "sniffed" directly while he was inspecting the Kraus property. He was sent to the hospital and later released.

The second incident occurred on September 12, 1982, when eight people who live around the Kraus property became sick with vomiting and flu-like symptoms. They also went to the hospital and blamed their illness on odors from the Kraus property. After this incident, the local fire department noted that all of the stricken people had been at the Bevin's residence, north of the Kraus property, during the day. The fire department suspected that a leak in the Bevin's private gas well may have caused the acute illness episode.

Fredle reported in Polrep 12 that the Ohio Department of Health (ODH) has written epidemiologic opinions, "that in at least three cases, acute symptoms are consistent with exposure to chemicals." Fredle did not report specifically which



LEGEND

GENERAL DRAINAGE PATTERN

CATCH BASIN

SOURCE: Site Inspection Report
D.C. Watson, U.S. EPA, EDO, et al.
Document Number: 01-5V25.0/0018.

DATE: June 18-19, 1979

N

0 500

250

APPROX. SCALE IN FEET

FIGURE 2-5
LOCATION OF CHEMICAL EXPOSURE DURING INITIAL EPA SITE INSPECTION
OLD MILL SITE

cases these were or what was the source of the ODH information.

In a "preliminary" memorandum by Georgi Jones of the Center for Disease Control (CDC) dated January 14, 1983, the contaminant levels in the site soil were considered to present a health risk. The CDC memorandum noted that skin contact can be a significant method of exposure to these chemicals and it is important to limit public access to the site. This memorandum is included in this RAMP in Appendix G.

Records of official reports or medical opinions to document deaths or chronic disease caused by exposure to chemicals at the Old Mill site are not present in U.S. and Ohio EPA files.

Cleanup Actions

In 1979-80, the U.S. and Ohio EPA attempted to obtain funds for site cleanup through 311 Clean Water Act resources. As a result, $10,000 was released to perform the hydrogeologic study by K-V Associates.

In September 1981, Fredle requested $50,000 of emergency removal Superfund monies to remove flammable drummed waste. Previous flammability tests on three drum samples had indicated that the contents ignited easily and burned readily. The site was judged a high fire hazard because of the flammable materials and the old dilapidated wooden buildings onsite. Fredle reported in Polrep 3 that the local volunteer fire department was not equipped to control a site fire. Fredle further noted that in the event of a fire, catapulting drums could spread fire into the village and cause a potential disaster.

In November 1981, the Old Mill site was funded with $50,000 of Superfund emergency monies for removal of flammable drummed waste. "Demand letters" were issued by U.S. EPA to the three businesses responsible for receiving the drummed waste and to the property owner, i.e., the bankrupt estate of the deceased property owner. Minimal response was received from these parties.

Also in November 1981, two waste generators, known to have waste at the site, removed their wastes without demand letters issued. Hughson Chemical Company removed 311 full drums and 22 empty drums by November 14, 1981. Premix Company removed 45 drums of mostly solid material by November 17th.

By the end of November 1981, all drum sampling and compatibility testing was completed with Superfund funding.

In July 1982, another waste generator, Stackpole Carbon, removed approximately 130 of their drums voluntarily before entering into a written agreement with the Ohio EPA.

On July 16, 1982, a demand letter was sent to the Ashtabula County Septic and Waste Services, Inc., the major hauler of waste drums to the Old Mill site. (Initial deadline for response was set for July 21, 1982. This was extended verbally in a telephone conversation to August 6, 1982. The final deadline for response was set for November 26, 1982, in a letter from Eileen R. Bloom to Mr. George Liviola.)

In July 1982, analysis of a composite sample from four drums detected 625 ppm PCB's. As a result, the initial disposal cost estimates were increased, disposal operations were delayed and the OSC requested an additional $55,000. At that time, approximately 750 to 800 drums remained onsite. The total liquid volume was estimated at 21,000 gallons, of which approximately 85 percent or 17,900 gallons were flammable.

In August 1982, liquid wastes sampled from 600 drums were delivered to the ERT mobile laboratory at a nearby site in Jefferson, Ohio. The purpose of this analysis was to locate the PCB-bearing drums for segregation.

On August 30, 1982 a citizen found a pile of 20 to 30 drums on the Kraus property. A sheriff's department deputy experienced serious eye irritation caused by vapors from a clear molasses-type substance in one of these drums which he "sniffed" directly during an initial investigation. The deputy was sent to the hospital and later released.

According to Fredle, in Polrep 11, the hospitalization incident heightened citizen's "fear" of the site. Media coverage of the incident increased further awareness of the situation.

On September 20, 1982, Fredle requested an increase in the allowed project cost ceiling from $50,000 to $106,000 to cover additional immediate removal actions, including removal of all PCB drums, all flammable drums, and all other remaining drums. Two other immediate actions were recommended: to provide site security and to identify and remove contaminated soils. The request was approved by U.S. EPA on October 1, 1982 for $110,000.

By October 1982, all drummed wastes were removed from the site. In addition, approximately 1 to 2 inches of contaminated soil were removed from the drum storage areas and pushed into two piles on the site. Rockwell removed 35 waste drums from the site on October 15, 1982.

The cost of the immediate removal action as of October 21, 1982 was estimated at $119,000. Privately owned groundwater wells and surface waters were sampled on October 6, 1982, as the first round of a monitoring program (see discussion in Section 2.3.2).

In November 1982, the two piles of contaminated soil were removed and disposed. Exploration holes dug on the Kraus property failed to reveal buried drums. Surface soil was sampled at the Henfield property and ten samples were sent for analysis. A second set of well water samples was taken on November 17, 1982. Data from these analyses is shown later in Tables 2-9 and 2-10.

In December 1982, the Old Mill site was referred to the Waste Management Division of U.S. EPA for further remedial actions on a "nonemergency" basis. Residential well sample results did not show indications of significant contamination from the site. Soil sample results did show contamination; however, immediate remedial actions were not judged necessary at that time.

Summary of Wastes Removed

The quantities of waste materials removed from the site under Superfund activities were summarized by Fredle in Polrep 17 dated October 21, 1982. Based on this report, the following quantities of hazardous wastes in approximately 750 to 800 drums were removed from the site with Superfund monies:

- 4,000 gallons of PCB liquids, taken to Chemical Waste Management in Alabama.
- 9,500 gallons of flammable liquids, taken to Solvent Resources in Dayton, Ohio for disposal.
- 650 gallons of inorganic liquids, taken to Chem Clear for treatment and disposal.
- 305 residual drums, disposed of at an Ohio EPA approved disposal site.
- 64 PCB contaminated drums, disposed of at CECOS-CER in Williamsburg, Ohio.
- 406 drums of sludges, solidified and sent to Chem Met in Wyandotte, Michigan for disposal.

In addition to these waste volumes, approximately 580 drums were removed by some of the identified waste generators. Fredle reported that the following waste generators removed their own waste drums during 1982:

- Hughson Chemical (311 full and 22 empty drums)
- Premix (45 drums)
- Rockwell (35 drums)
- Stackpole Carbon (130 drums approximately)
- Molded Fiberglass Company (29 drums)
- Roller Reinforced Plastics (2 drums)

2.2.3 Chronology

A chronology of significant events relating to the Old Mill site is included in Appendix B.

2.3 HAZARDOUS MATERIALS CHARACTERIZATION

At this time, no known hazardous wastes are stored on the Old Mill site. All known waste drums were removed during immediate removal activities by waste generators and Superfund contractors during 1982. A discussion describing the sampling and analysis of wastes which were stored and spilled on the site prior to November 1982 is provided in Appendix C.

2.3.1 Hazardous Material Sources

Several generators of hazardous wastes found at the site were identified by labels and other markings on some of the drums. This was documented in various site inspection reports prepared from 1979 through 1982. Waste generators are identified in the Responsibility Party Search and related enforcement documents. All waste generators contributed drummed materials, almost entirely 55-gallon drums, to the site. With the exception of two tanks on the Kraus property observed during the RAMP site visit, no bulk tanks or miscellaneous smaller "laboratory" type containers are known to have been disposed of on the site.

Two waste transporters were reported to have delivered hazardous wastes to the site. Aardvark Trucking was reported to haul Hughson Chemical's waste. The other major transporter was reported to be Ashtabula County Septic and Waste Services, Inc.

2.3.2 Sampling and Analysis of Contaminated Soil, Runoff, and Groundwater

Various samples of drums, spills, contaminated soils, runoff, and groundwater were taken and analyzed at the site since 1979. A summary of reported sampling events is presented in Table 2-1. Sampling and analysis of drums which have been removed and spills are discussed in Appendix C. The sampling and analysis of contaminated soil, runoff, and groundwater at the site is discussed below.

Contaminated Soil

Soil samples were taken at the Old Mill site in June 1979, and in October and November 1982.

During the site investigation on June 19, 1979, three soil/-sediment samples were taken from the Kraus property along with two waste samples and a runoff sample. Analysis of the

Table 2-1 (Page 1 of 2)
SUMMARY OF REPORTED SAMPLING EVENTS AT THE
OLD MILL SITE
W65125.00

Sampling Date	Report Date	Location of Sample	Description of Materials Sampled	Comments
June 19, 1979	Aug. 31, 1979	Kraus Property	Sediment/soils, oil, drum liquid, waste solid, drainage water.	Six samples taken, numbered 79EW05S01-06. Data set EDO428.
May 2-8, 1980	Aug. 4, 1980	Henfield Property	Drainage water, brine puddles, drum spills, oil spills, well water.	Ten samples collected, numbered 80EW08S01-10. Data set EDO514.
May 2-8, 1980	June 3, 1980	Henfield Property	Spill samples.	Three flammability tests conducted and demonstrated a fire hazard.
Oct. 12, 1980	Jan. 5, 1981	Henfield Property	Contents of 76 drums.	Composite sample of 76 separate drums. Confirms fire hazard; PCB's at less than 10 ppm.
Oct. 12, 1980	Oct. 28, 1980	Henfield Property	Five waste drums.	Drum samples numbered 81-VK04S01-05; sampling persons unknown, suspected to be Ken Harsh, OEPA.
January - March 1981	March 27, 1982	Henfield Property	Water and sediment samples from catch basin and culvert outlet.	Three samples total. Number 81VF14S01 dated January 1, 1981. Number 81VF14S02 dated March 3, 1981. Number 81VF14S03 dated March 3, 1981.
June 1982	July 19, 1982	Henfield Property	Contents of 750 to 800 remaining drums onsite.	Composite sample analysis shows 72% xylene and 625 ppm PCB. Analyzed by Howard Laboratory.
Sept. 14, 1982	--	Kraus Property	Drum samples.	Four samples total. Numbers 82-EF01S01 through 82-EF01S04.
Sept. 21, 1982	Sept. 23, 1982	Henfield Property/ Kraus Property	Air monitoring.	Three 8-hour samples were collected (two on the Old Mill site, one on the Kraus site). An HNU and OVA were used to monitor the air in the drum areas and along the site perimeter.

Sampling Date	Report Date	Location of Sample	Description of Materials Sampled	Comments
Oct. 5, 1982		Kraus Property	Four soils samples and 17 water samples from private wells and surface water.	Soil samples numbered 82CY13S18-21; water samples numbered 82CY14S01-17.
Oct. 9, 1982	--	Henfield Property	Air monitoring w/HNU	1.4 to 8.0 ppm in several locations. Peaks of 14 to 15 ppm in Area C.
Oct. 13, 1982	--	Henfield Property	Air monitoring.	7-hour composite sample.
Oct. 19, 1982	Nov. 10, 1982	Henfield Property	Soils from two piles of contaminated soils scraped from drum storage areas.	Areas "C" and "D" and "E" were scraped into two piles; total 80 CY. Analyst unknown. Piles removed and disposed November 12, 1982.
Nov. 16, 1982	Nov. 18, 1982	Henfield Property	Soil samples (TAT).	Soil samples taken at 34 locations. 10 samples analyzed for: PCB's, organic scan, mercury phenolics, and ICAP metals.
Nov. 17, 1982	Nov. 18, 1982	Henfield Property	Water samples (TAT).	Fifteen water samples from wells and surface waters in Rock Creek. Samples analyzed for PCB's, organic scan, volatile organics sulfate, chloride, mercury, ICAP metals, sulfides and phenolics.
--	Oct. 20, 1982	Henfield Property	Drum samples.	Rough estimate of actual levels of PCB's present in drum samples.

samples is summarized in Table C-1 in Appendix C. Contaminants in soils were reported to include waste oil, phthalates, and a substituted phenol.

In October 1982, four soil samples were collected at the Kraus property, at the locations shown in Figure 2-6. Results of the inorganic analysis showed relatively high levels of iron, manganese, zinc, and lead in some of the samples. Results are summarized in Table 2-2. Organic analysis detected only acetone, in the following concentrations:

Soil Sample Number	Acetone Concentration (ug/kg)
82-CY14S18	72
82-CY14S19	200
82-CY14S20	94
82-CY14S21	133

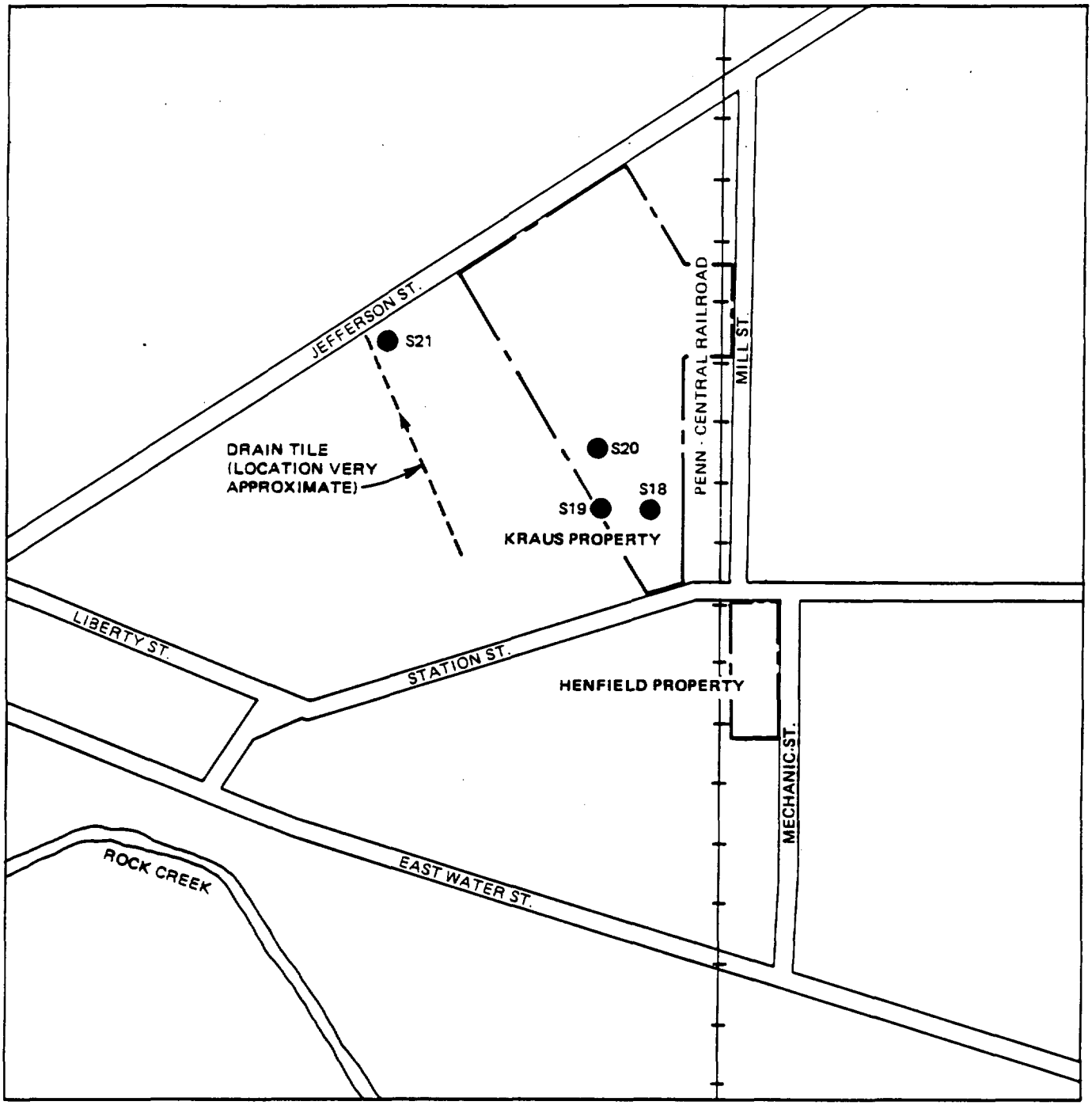
In October 1982, two piles of contaminated soil scraped off drum storage areas at the Henfield property were sampled and analyzed prior to disposal. Results of these analyses are shown in Table 2-3. These results are considered indicative of only potential contamination remaining on the Henfield property, since these piles of soil have been removed from the site.

In November 1982, 34 soil samples were taken by TAT personnel (U.S. EPA contractors) as directed by Fredle. Ten of these samples were analyzed. The locations of these samples are shown in Figure 2-7. The results of inorganic analysis on these soil samples are summarized in Table 2-4. Results of organic analysis for the volatile, base/neutral, and acidic fractions are summarized in Table 2-5. Many additional organic compounds were tentatively identified; these included substituted naphthalenes, oxygen and sulfur heterocyclics, and substituted benzenes. The laboratory reports listing these compounds are in Appendix D. These data indicate the type of contamination potentially remaining on the site.

Contaminated Runoff

Runoff samples were taken at the Old Mill site in June 1979, May 1980, and January through March 1981.

Results of the runoff sample taken on June 19, 1979 at the Kraus property are shown on Table C-1 and results of the runoff sample taken in May 1980 at the Henfield property are shown in Table C-2. Neither samples showed significant organic or inorganic contamination.



LEGEND

● SAMPLES

SOURCE: U.S. EPA, Region V, Old Mill Site Data File.

N

0 400

200 600

SCALE IN FEET

FIGURE 2-6
LOCATIONS OF SOIL SAMPLES TAKEN AT THE KRAUS PROPERTY OCTOBER 5, 1982
OLD MILL SITE

Table 2-2
SUMMARY OF INORGANIC ANALYSIS ON SOIL SAMPLES COLLECTED AT
THE KRAUS PROPERTY, OLD MILL SITE, OCTOBER 5, 1982
W65125.00

Sample Number	Sample Location/ Description	INORGANIC CONSTITUENTS (mg/kg)															
		Ag*	Al	B	Ba	Be*	Cr*	Co	Cu*	Fe	Mn	Ni*	V	Zn*	As*	Cd*	Hg*
82-Cy14S18	"New" Drum Site	2.5	2,400	12	22	ND	4.2	9.5	18	680	320	11	ND	44	1.6	2.0	ND
82-CY14S19	"Stained" Area	ND	8,200	13	20	ND	ND	ND	12	1,700	71	ND	ND	21	ND	0.3	ND
82-CY14S20	"Old" Drum Area	ND	5,900	ND	ND	ND	5.1	ND	7.2	910	78	ND	ND	2.6	ND	0.2	ND
82-CY14S21	Sediment - End of Tile at Kraus Site	ND	7,400	ND	38	ND	ND	ND	ND	1,900	220	ND	ND	24	ND	0.3	ND
82-CY14S22	Soil Field Blank	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample Number	Sample Location/ Description	Pb*	Sb*	Se*	Sn	Tl*
82-Cy14S18	"New" Drum Site	64	ND	ND	ND	ND
82-CY14S19	"Stained" Area	18	ND	ND	ND	ND
82-CY14S20	"Old" Drum Area	1.8	ND	ND	ND	ND
82-CY14S21	Sediment - End of Tile at Kraus Site	1.9	ND	ND	ND	ND
82-CY14S22	Soil Field Blank	ND	ND	ND	ND	ND

NOTES:

ND = Not detected.
* Priority pollutant metals.

organic analysis showed Acetone only

GLT405/39

Table 2-3
LEACHATE TESTING RESULTS (IN ACCORDANCE WITH FEDERAL REGISTER VOLUME 45, NUMBERS 98 MAY 19, 1980)
TWO COMPOSITE SOIL SAMPLES OBTAINED October 19, 1982
HENFIELD PROPERTY, OLD MILL SITE
Rock Creek, Ohio
W65125.00

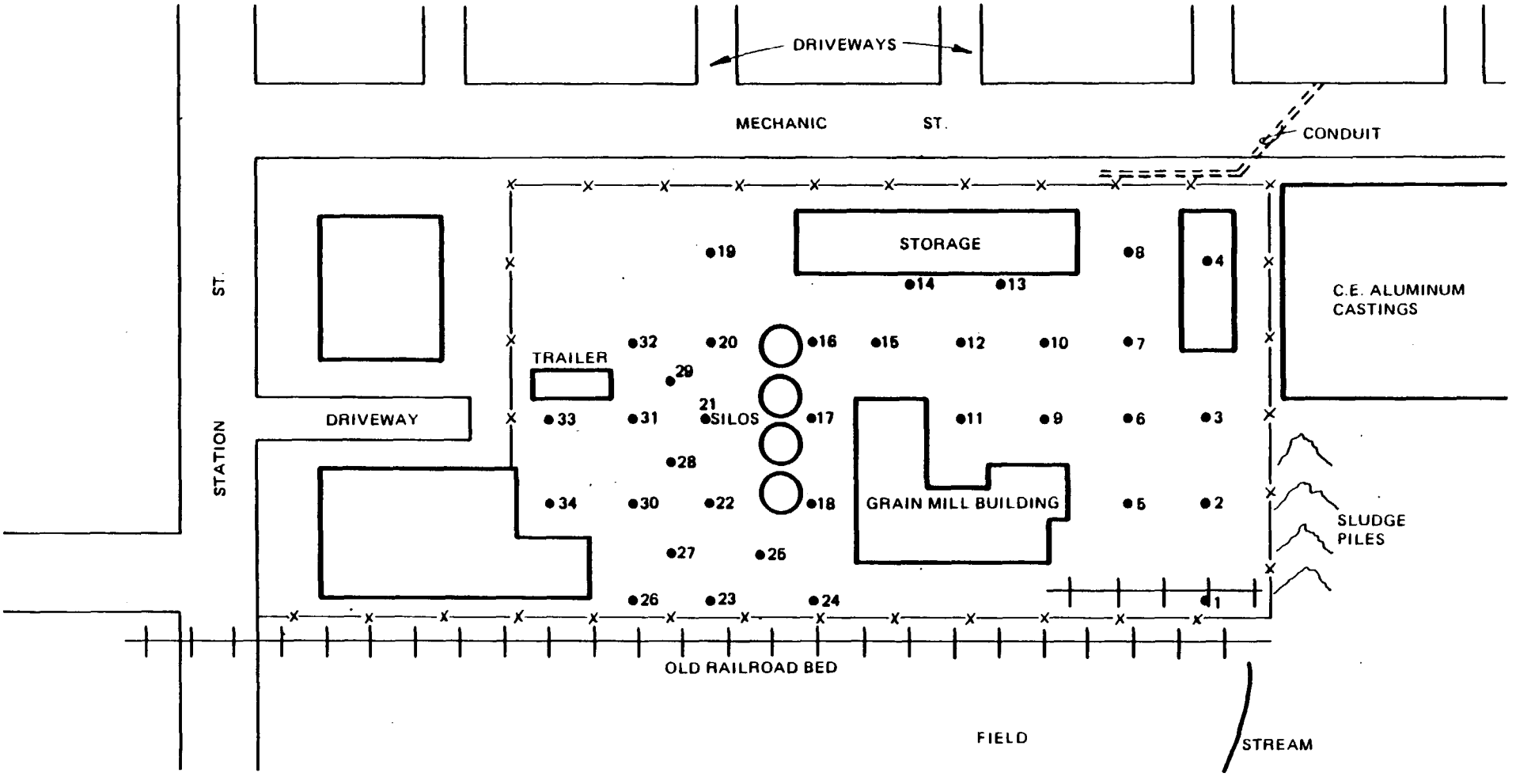
Sample Identification: Composite Soil from Drum Area "C" Old Mill Site-Rock Creek, Ohio 10/19/82

PCB	2 ppm Aro 1260	Solvent Scan:	
Arsenic	Less than .005 mg/l	Methylene Chloride	33 ppm
Barium	.1 mg/l	Trichloroethylene	65 ppm
Cadmium	Less than .01 mg/l	Tetrachloroethylene	16 ppm
Chromium	Less than .02 mg/l	Toluene	16 ppm
Mercury	Less than .005 mg/l	Ethylbenzene	13 ppm
Lead	Less than .1 mg/l	Xylenes	18 ppm
Selenium	Less than .005 mg/l		
Silver	Less than .01 mg/l		
Phenol	2 mg/kg		

Sample Identification: Composite Soil Sample from Drum Areas D & E 10/19/82 Old Mill Site-Rock Creek, Ohio

PCB	5 ppm Aro 1260	Solvent Scan:	
Arsenic	Less than .005 mg/l	Dichloroethylene	25 ppm
Barium	.1 mg/l	1,1,1-Trichloroethane	8 ppm
Cadmium	Less than .01 mg/l	Trichloroethylene	120 ppm
Chromium	Less than .02 mg/l	Tetrachloroethylene	200 ppm
Mercury	Less than .005 mg/l	Toluene	16 ppm
Lead	Less than .1 mg/l	Ethylbenzene	22 ppm
Selenium	Less than .005 mg/l	Xylenes	50 ppm
Silver	Less than .01 mg/l		
Phenol	4 mg/kg		

GLT405/34



LEGEND

x——x FENCE

● SAMPLES

SOURCE: U.S. EPA TAT Team, Memorandum.

0 50 100

SCALE IN FEET

FIGURE 2-7
SOIL SAMPLING LOCATIONS AT HENFIELD PROPERTY, NOVEMBER 16, 1982
OLD MILL SITE

Table 2-4
SUMMARY OF HENFIELD PROPERTY, OLD MILL SITE, SOIL ANALYSIS
SAMPLING PERFORMED NOVEMBER 16, 1982
INORGANIC CONSTITUENTS
W65125.00

Element	SOIL SAMPLE NUMBERS (See Figure 2-7)									
	S02	S07	S12	S18	S21	S23	S28	S29	S34	S35
AG ug/g	0.56	0.58	1.8	< 0.30	< 0.30	0.98	< 0.30	< 0.30	< 0.30	< 0.30
B ug/g	110	74	38	18	24	43	17	18	19	< 8.0
BA ug/g	97	240	560	190	90	250	140	120	130	< 0.50
BE ug/g	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.80	< 0.10	< 0.10	< 0.10	< 0.10
CD ug/g	< 0.2	2.5	1.1	1.1	0.47	17	3.9	< 0.20	< 0.51	< 0.20
CO ug/g	4.5	6.9	7.7	5.5	3.7	4.1	5.5	8.8	6.8	< 0.60
CR ug/g	64	60	32	30	20	65	17	23	27	< 2.8
CU ug/g	840	1,100	190	150	180	1,900	91	48	160	< 1.3
LI ug/g	28	25	17	6.3	9	12	16	29	19	< 1.0
MN ug/g	810	930	520	120	320	500	750	500	700	< 0.50
MO ug/g	5.1	4.1	3.7	3.4	2.7	3.9	2.3	2.1	3.4	< 1.0
NI ug/g	55	65	25	14	16	80	15	24	26	< 1.5
PB ug/g	350	310	180	320	120	1,400	1,300	71	160	< 7.0
SN ug/g	97	36	12	10	11	150	7.8	< 4.0	5.4	< 4.0
SR ug/g	280	210	110	38	89	99	66	110	110	< 1.0
V ug/g	29	24	16	17	13	16	13	23	18	< 0.50
Y ug/g	4.4	10	9.6	4.2	4	6	9	11	8.7	< 0.50
ZN ug/g	620	860	300	320	160	1,700	380	110	210	< 4.0
CA mg/g	33	51	21	1.8	18	50	17	50	16	< 0.05
MG mg/g	11	10	4.5	0.70	1.9	17	4.2	5.4	2.3	< 0.01
NA mg/g	0.30	1.1	0.46	0.13	0.26	0.28	0.23	0.27	0.24	< 0.10
AL mg/g	67	41	13	7.5	9	43	9	16	12	
FE mg/g	35	38	27	37	30	13	18	27	26	

GLT405/40

Table 2-5
SUMMARY OF HENFIELD PROPERTY, OLD MILL SITE
SOIL ANALYSIS SAMPLING PERFORMED NOVEMBER 16, 1982
ORGANIC CONSTITUENTS
W65125.00

	SOIL SAMPLE NUMBERS (See Figure 2-7)										
Volatile Compounds, mg/kg	S02	S07	S12	S16	S18	S21	S23	S28	S29	S34	R35
DICHLOROMETHANE		.110	.042	.69			18	7.97	0.47		40.6
1,1-DICHLOROETHYLENE			.047								
1,2-DICHLOROETHYLENE			.018				16				
1,1,1-TRICHLOROETHANE			.222						.266		
TRICHLOROETHYLENE	126.7	2.35	14.9	1.92		1,220	13	1.56	2.63		5.1
1,1,2-TRICHLOROETHANE			.139			10			.026		
1,1,2,2-TETRACHLOROETHANE		.071					9.67				
TETRACHLOROETHYLENE	35.2		6.86	.405		120	538	1.36	6.06		
METHYLBENZENE			.029	.715				164	.038	103.2	
ETHYLBENZENE			.019	.540		1,420	76	369		42.9	
1,3-DIMETHYLBENZENE				1.44		1,610	352	983		653	
1,2- & 1,4-DIMETHYLBENZENE			0.44	646		1,865	96.1	745	.074	608	
Base/Neutral Compounds, mg/kg											
NAPTHALENE			6.4	0.5	120	1.7	120		3.6	6.0	
ACENAPHTHALENE		0.9		0.7	1,200	0.3	150	0.4		3.9	
FLUORENE				1.1	194.9		60.0				
PHENANTHRENE/ANTHRACENE	2.1	18.6		56.0	1,500	12.0	180	10.0	2.7		
FLUORANTHENE/PYRENE	5.4	46.1	40.0	129	5,800	14.0	250	59	2.7		
CHRYSENE/BENZO(a)ANTHRACENE			24.0	83.6	2,300		63.0				
BIS(2-ETHYLHEXYL) PHTHALATE	5.9	1.4	6.6		14.5			22.0	1,967.5		
DI-N-OCTYLPHTHALATE		10.0	0.4				5.2				
BENZO(b and k)FLUORANTHENE			32.0	422.7	811.0						
BENZO(a)PYRENE	0.9		5.7	8.2	49.5						
Acid Compounds mg/kg											
PHENOL							180				

GLT405/41

Results of organic analysis for volatile and base/neutral fractions in water samples from the catch basin and culvert outlet at the Henfield property in 1981 are shown in Tables 2-6 and 2-7. These runoff samples showed significant concentrations of substituted naphthalenes. These data correspond to the types of contamination found later in soil samples taken in November 1982.

The K-V Associates hydrogeology study published in 1981 reported discharges of aromatic organics in the surface drainage from the Henfield property. Based on fluorescence spectroscopy of aqueous samples from the drainage conduit discharge (southwest corner of property), the following general classes of compounds were suspected to be present:

- Acenaphthene
- Diethylphthalate
- Arochlor
- Chloronaphthalene
- Chloroanline
- Chloro-o-toluidine
- Hydroquinone
- Naphthylene and derivatives
- Diphenylamine
- Toluene
- Benzene
- Creosol
- Phenol
- Xylene

Contaminated Groundwater

The K-V Associates hydrogeology study published in 1981 reported discharges of aromatic organics in the groundwater discharge apparently originating from seepage in the area of the silos on the Henfield property. Based on fluorescence spectroscopy of groundwater samples taken from shallow borings, the following general classes of compounds were suspected to be present:

- Polynuclear aromatic hydrocarbons (PAH)
- Naphthylamine
- Oil (drilling fluid)
- Cottonseed oil

Areas of reported surface and groundwater contamination are shown in Figures 2-8 and 2-9. The locations of the shallow borings are also shown in these figures.

Groundwater samples were taken from private wells in the vicinity of the Old Mill site on October 5, 1982, and November 17, 1982.

Table 2-6
RESULTS OF PURGEABLE ORGANICS ANALYSIS OF U.S. EPA WATER AND SEDIMENT SAMPLES COLLECTED AT THE OLD MILL SITE[a,b]
January - March 1981
W65125.00

Compound	Concentration (ppb) VF14S02[c]	VF14S03[d]	VF14201[e]
Ethene, 1,2-dichloro-(311)	6.1	12	-
Methane, Trichloro-(311)	0.51	0.73	-
Ethene, 1, 1.1-trichloro	15	19	-
Ethene, trichloro-(311)	92	-	-
Ethene, Tetrachloro	5.1	-	-
Ethane, 1.1-dichloro	-	2.3	-
Methane, tetrachloro	-	1.3	-
Benzene, Methyl - (311)	-	1.4	-

Notes:

[a] Data from memorandum by Curtis Ross, Director Central Regional Laboratory dated 3/27/81.

[b] GC/MS scans on these samples did not reveal any PCB isomers (detection limit approximately 200 ppb).

[c] Sediment from catch basin dated 1/8/81.

[d] Water sample from catch basin dated 3/3/81.

[e] Water sample from culvert outlet dated 3/3/81.

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Table 2-7
RESULTS OF BASE-NEUTRAL ORGANIC SCAN ANALYSIS
OF U.S. EPA WATER AND SEDIMENT SAMPLES COLLECTED
AT THE OLD MILL SITE
January - March 1981
W65125.00

Sediment Sample 81-VF14S01 from Catch Basin (Dated 1/8/81)

Compound	Estimated Construction mg/kg
Dimethylnaphthalene (2 Isomers)	270
Trimethylnaphthalene (1 Isomer)	44
Hydrocarbons (17)	3,200

Water Sample 81-VF14S02 from Catch Basin (Dated 3/3/81)

Compound	Estimated Construction ug/kg
4-Ethyl-1,2-Dimethylbenzene	8,000
1,2,3,4-Tetrahydro-6-Methylnaphthalene	13,000
Methylnaphthalene (2 Isomers)	86,000
Dimethylnaphthalene (4 Isomers)	56,000
Trimethylnaphthalene (5 Isomers)	79,000
1,2,3,4-Tetrahydro-1,8-Dimethylnaphthalene	4,000
1-Methyl-7-(1-Methylethyl)Naphthalene	8,200
Methylphenanthrene/Methylanthracene (3 Isomers)	26,000
Dimethylphenathrene/Dimethylanthracene (1 Isomer)	12,000
Unidentified Hydrocarbons (27)	941,000

Water Sample from Culvert Outlet (Dated 3/3/81)

Compound	Estimated Construction ug/kg
Methylnaphthalene (2 Isomers)	18,000
Dimethylnaphthalene (4 Isomers)	480,000
Trimethylnaphthalene (3 Isomers)	220,000
(1-Methylethyl)Naphthalene[a]	41,000
(1-Methylethyl)Naphthalene[a]	37,000
Hydrocarbons (20)	4,800,000

Note:

[a] Positioning numbers/information was illegible on original copy of data.

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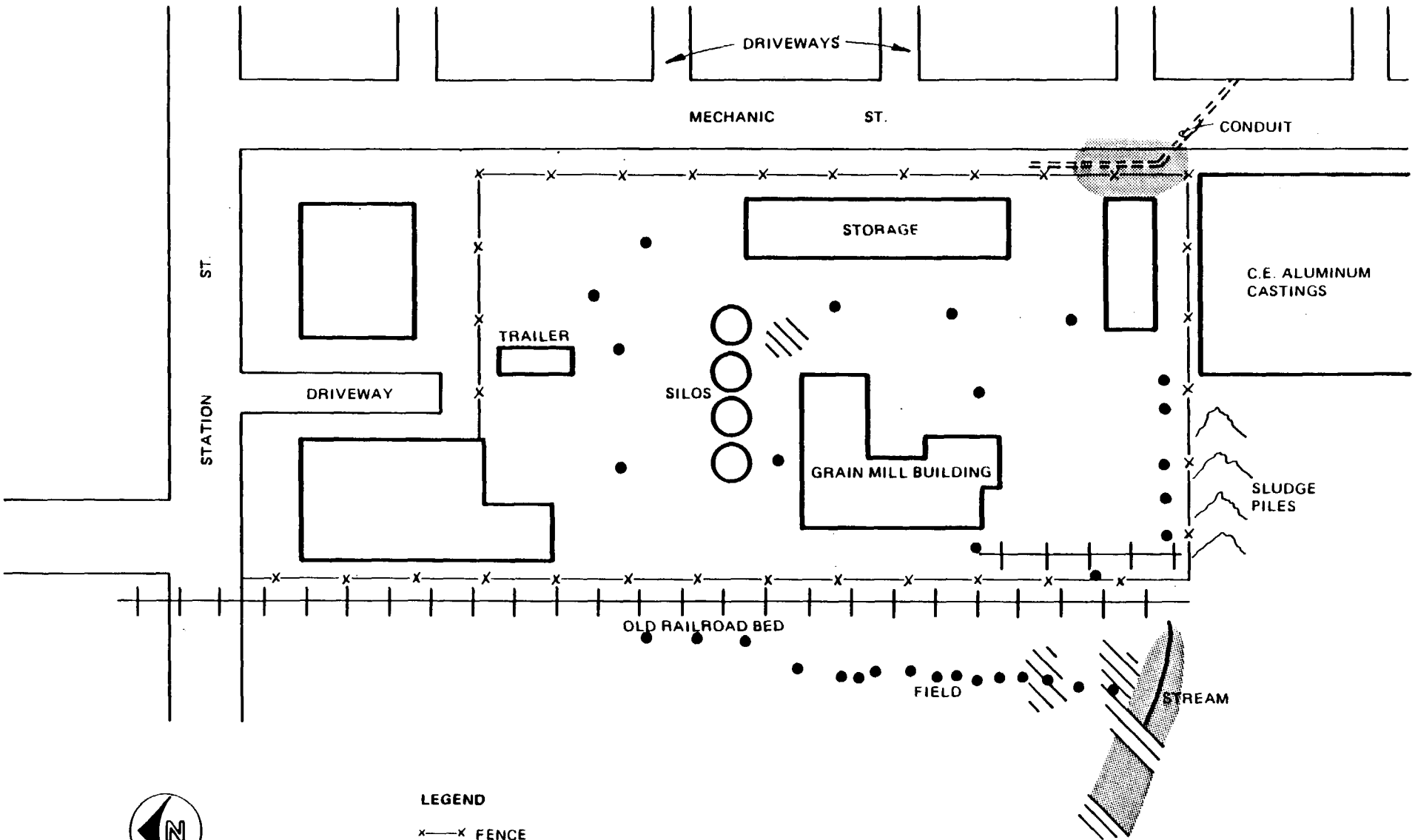
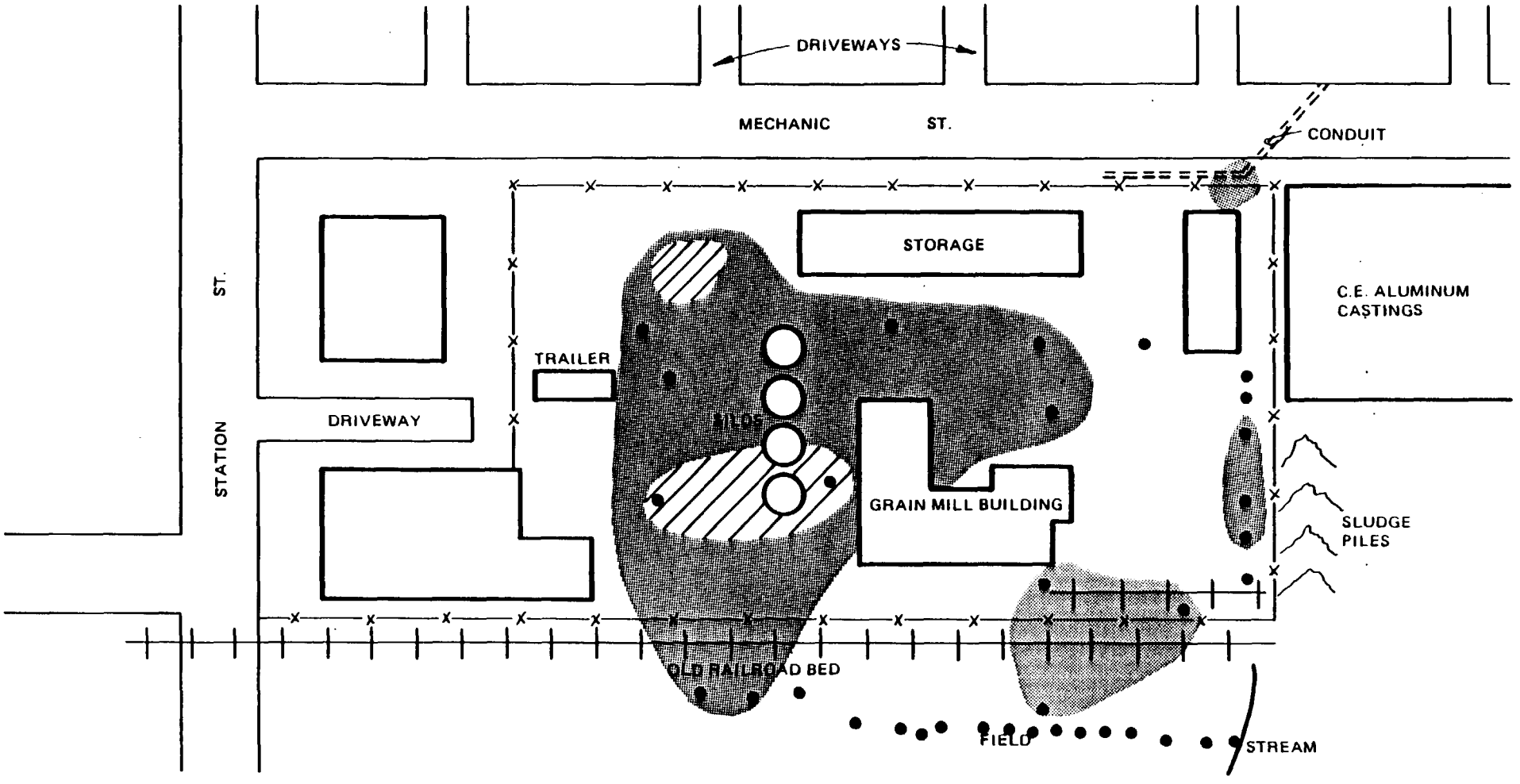
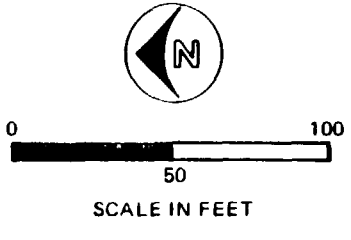


FIGURE 2-8
AREAS OF SURFACE AND GROUNDWATER CONTAMINATION DETERMINED WITH FLUORESCENCE SPECTROSCOPY (RELATIVE FLUORESCENCE AT 290 nm PEAK) BY K-V ASSOCIATES JANUARY 8, 1980.
OLD MILL SITE





LEGEND

- FENCE
- CONTAMINATION DETECTED
- HIGHER CONCENTRATION CONTAMINATION DETECTED
- GROUNDWATER SAMPLING LOCATIONS

FIGURE 2-9
AREAS OF SURFACE AND GROUNDWATER CONTAMINATION DETERMINED WITH FLUORESCENCE SPECTROSCOPY (RELATIVE FLUORESCENCE AT 340 nm PEAK) BY K-V ASSOCIATES, JANUARY 8, 1980.
OLD MILL SITE

In private residential well samples from October 5, 1982, detectable concentrations of organic contamination were not reported with the exception of two wells, Bevin's and Cone's, which were found to have 43 ug/l and 31 ug/l of benzoic acid, respectively. Benzoic acid was also found in the sample blank at 11 ug/l.

Some well samples taken November 17, 1982, were reported to contain some base/neutral organic compounds, as summarized in Table 2-8. The locations of these wells are shown in Figure 2-9. No acid or volatile fraction organic compounds were reported in the private residential well samples. However, four volatile organics were reported in the City water tap of the Bevin's residence as shown in Table 2-8. These results cannot be correlated directly to known wastes previously stored on the Old Mill Site.

Inorganic analysis results from the well water samples are summarized in Table 2-9. These data show elevated concentrations of lead, barium, iron, manganese, strontium, lithium, and zinc. These results also cannot be correlated directly to known wastes previously stored on the Old Mill site.

2.4 ENVIRONMENTAL SETTING

2.4.1 Physiography

The Old Mill site is in a small village setting. The site itself is located within the corporation limits of the Village of Rock Creek, Ashtabula County, approximate latitude 41° 39' 46" and longitude 80° 50' 48"; the Henfield property is southwest of the intersection of Mechanic and Station Streets; and the Kraus property is located northwest of this intersection.

The Old Mill site is located in the Grand River Basin. Runoff from the Henfield property flows to an unnamed drainage stream which flows westward to Rock Creek; Rock Creek flows into the Grand River. Runoff from the Kraus property flows to the Grand River via three waterways: an unnamed tributary to Badger Run; Badger Run to Three Brothers Creek; and Three Brothers Creek to the Grand River.

2.4.2 Geology

The soil at the Henfield property observed during K-V Associates hydrogeology investigation conducted in 1979 and 1980 was reported as disturbed fill, stratified cinder/loam/gravel and silty loam wetlands. Twenty shallow soil borings were made to determine subsurface soil characteristics. The investigation report by K-V Associates stated that "generally, cores taken from the central regions of the site revealed a porous cinder layer extending to about 1 foot below grade,

Table 2-8
SUMMARY OF ORGANIC ANALYSIS OF PRIVATE WELL SAMPLES
SAMPLING PERFORMED NOVEMBER 17, 1982
OLD MILL SITE
W65125.00

	WELL NAME AND SAMPLE NUMBER																
Base/Neutral Compounds, ug/l	Bevin Well S01	Thompson Well S02	Cone Well S03	Carson Well S04	Highlander Well S05	Hall Sump S06	Hall Well S07	McClusky Pond S08	Gill Well S09	Pond North end of Kraus Site S10	Thompson Pond S11	M&B Hall Sump S12	Stolder Well S13	Blank S14	Bevin City Tap S15	Reported Detection Limit	U.S. EPA WQC[a]
Di-4-Butylphthalate	5.4			3.3								4.5				" "	34,000[b]
Butylbenzylphthalate		21.2		1.2			66.4					5.9	106.9			" "	NCA[c]
Chrysene												2.7				" "	0.0028[c]
Bis(2-Ethylhexyl)Phthalate			3.7					52				22.6	33.4	8.1	5.3	" "	15,000[b]
Volatile Compounds, ug/l																	
Chloroform															243.5		0.19[c]
Dichlorobromomethane															65.4		0.19[c]
Dibromochloromethane															14.4		-
Tetrachloroethylene															12.8		-

NOTES:

[a] 1980 EPA Ambient Water Quality Criteria for the protection of human health from the toxic properties of a pollutant ingested through water.
[b] No criteria available.
[c] WQC for carcinogenicity protection with a risk factor of R = 0.00001

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Table 2-9
SUMMARY OF INORGANIC ANALYSIS OF PRIVATE WELL SAMPLES
SAMPLING PERFORMED NOVEMBER 17, 1982
OLD MILL SITE
W65125.00

	Bevin Well S01	Thompson Well S02	Cone Well S03	Carson Well S04	Highlander Well S05	Hall Sump S06	Hall Well S07	McClusky Pond S08	Gill Well S09	Pond Northend of Kraus Site S10	Thompson Pond S11	M&B Hall Sump S12	Stolder Well S13	Blank S14	Bevin City Tap S15	Ditch SW Corner of Old Mill	Detection Limit
CA mg/l	71.0	32	41	133	97.3	63.5	47.6	34.7	83.6	65.9	31.8	86.9	670	.5	42	165	
MG mg/l	12.8	5.5	10.1	52.0	37	21.8	6.5	12.5	28.1	15.0	10.5	23.0	273		11.9	40.9	< 0.1
NA mg/l	22.3	5.0	40.5	53.7	23.3	24.9	12.6	15.6	22.9	66.7	4.7	32.2	854		21	163	< 1
Sulfide ug/l	50	40	30	1,560	< 10	30	< 10	< 10	20	10	30	10	20	* 660	< 10	10	10
AG ug/l																	< 3
AL ug/l	119	137				297		166		164	2,930	341				469	< 80
B ug/l	307	288	125	226	122	254	138	198	144	168	144	240	701		98	364	< 80
BA ug/l	54	78	112	101	51.6	44.5	37.0	20.9	73.1	46.2	45.2	47.0	11,700		34.9	93.3	
BE ug/l																	< 1.0
CD ug/l												2.7					< 2.0
CO ug/l												6.87	11.7				< 6.0
CR ug/l				10.4				9.65		11.3	13.3	12.3	20	11	9	126	< 8.0
CU ug/l	17.5	7.8	45.6	76.1	34.5	6.91	13.3		10.4		7.5	13.6	41.2		91.1	20.2	< 6.0
FE ug/l	613	2,170	1,810	1,930		363		199	725	258	2,930	608	1,940			911	< 80.0
LI ug/l	11.2			57.7	41.9	21.1			34.5	15.8		12.3	244			40.8	< 10.0
MN ug/l	22	205	338	324	161	7.9		25.1	92	29	445	151	652			566	< 5.0
MO ug/l																	< 10.0
NI ug/l																66.4	< 15.0
PB ug/l																	< 70.0
SN ug/l																	< 40.0
SR ug/l	304	103	160	429	285	281	211	107	273	574	98	312	11,200		200	839	< 10.0
TI ug/l											38.1						< 25.0
V ug/l							5.73				5.27	5.05	7.52				< 5.0
Y ug/l																	< 5.0
ZN ug/l	190	433	216	2,130			144		61.9			56.7	68.3				< 40.0
Total AS ug/l																	2.0
Total PB ug/l	8.0	12.6	5.2	19.0	< 2.0	2.3	3.2	2.1	< 2	< 8	< 8	17.0	6.0	< 4	5.8	8.2	
Total SE ug/l						2.1	4.6	2.3		< 4			< 4			3.7	2.0
HG ug/l	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	1.5	< 0.1	0.2	0.2	
Sulfate mg/l	59	< 5	38	249	145	72	43	30	119	116	26	122	17	< 5	47	192	
Chloride mg/l	61	10	75	78	31	17	11	61	43	169	< 5	60	3,300	< 5	35	400	

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underlain by a 2- to 3-foot width of sandy or silty loam, underlain by a permeable sand and gravel region."

During the same subsurface investigation, samples taken from the western edge of the site and the adjacent wetlands were found to contain 1 to 2 feet of dark brown to black wetlands loam underlain by thick silty to clayey loam deposits. Some sample cores included slag or gravel deposits probably placed as railroad track foundation.

Soil in the vicinity of the conduit which runs along the border between the Old Mill site and Rock Creek Aluminum Company was reportedly disturbed down to the level of the drainage conduit.

The USDA Soil Survey of Ashtabula County, Ohio, issued May 1973, describes the soil at the Old Mill site. The Henfield property is composed entirely of the Platea Series which consists of loamy nearly level to sloping soil that is somewhat poorly drained. This soil has a dense, compact layer, or fragipan, in the lower part of its subsoil. Platea soil formed in a silt loam glacial till of Wisconsin age.

A representative profile of a Platea soil has about 21 inches of loamy material above the top of the fragipan. The uppermost 13 inches is mostly light yellowish-brown silt loam. Strong, brown, light silty clay loam is between depths of 13 and 21 inches. The fragipan extends to a depth of 44 inches. It is very firm and slows the downward movement of water and the downward penetration of plant roots. This fragipan is olive-brown, heavy silt loam. Below the fragipan is olive-brown silt loam glacial till.

The Kraus property is composed of two soil series: the Platea exists on most of the former waste storage areas and the Sheffield is present generally west and south of the former waste storage areas. The Platea Series is as described above. The Sheffield Series consist of loams, poorly drained, nearly level soils. Sheffield soil also has a dense, compact fragipan in the subsoil.

In a representative profile, the upper layer of a Sheffield soil is dark greyish-brown silt loam 8 inches thick. Below this layer, to a depth of 22 inches, are layers of light gray and light brownish-gray silt loam. The fragipan exists between depths of 22 and 41 inches. It is a greyish-brown to olive-brown very firm heavy silt loam and contains greyish coatings. The underlying material is olive-brown silt loam glacial till. About 10 percent of this till is composed of sandstone and shale fragments. Below the upper layer, this soil is mottled throughout with yellowish brown, strong brown, and other colors.

Below both the Platea and Sheffield Series soils, the bedrock is interbedded shale and sandstone of the Ohio formation, Devonian System, and is encountered at depths reported less than 15 feet in local well logs.

2.4.3 Hydrology

The natural surface drainage of the Henfield property appears to be generally toward the west and south. The primary surface runoff discharge is in the southwest corner of the site. A catch basin at the southeast corner of the Henfield property collects drainage and runoff from Mechanic Street, as shown in Figure 2-3. Four drains connect to the catch basin. The pipe from the catch basin runs toward the west approximately 10 feet within the southern boundary of the site. This pipe outfalls across the abandoned railroad tracks at the southwest corner of the site into a drainage stream which flows westward to Rock Creek.

The natural surface drainage of the Kraus property appears to be generally toward the northwest. A drain tile reportedly runs south to north near the far western side of the property (see Figure 2-6).

2.4.4 Hydrogeology

According to the Ashtabula County Groundwater Resources map published in 1978, the Old Mill site is located in an area described generally as:

> "Clay and sandy clay, less than 30 feet thick, overlying shale. Yields of less than 3 gpm are available from the upper few feet of weathered shale. Many wells are dry. Salt water may be encountered as shallow as 50 feet into the shale. Poor area for developing even minimal domestic supplies. Dug wells and cisterns are common."

Practically all the hydrogeologic information on the Old Mill site was developed at the Henfield property in a hydrogeology study prepared by K-V Associates, Inc. for the U.S. EPA and published in January 1981. Shallow groundwater borings were excavated in 17 locations onsite and 16 locations near the site and downgradient of the dominant groundwater flow direction. Locations of these observation pits are shown in Figures 2-8 and 2-9. Wells were not installed during this study. Groundwater monitoring wells are not present on any part of the Old Mill site.

According to the K-V Associates' report, groundwater movement onsite at the Henfield property appeared complex in the vicinity of the drainage conduit on the south side of the property. During dry weather, groundwater drained toward the conduit but, during wet weather, groundwater discharged away from it. Groundwater from the major portion of the property was reported to proceed westerly towards the old Penn Central railroad bed and beyond, across the wetlands field towards the stream bed. The stream bed originates from the southwest corner of the site and meanders generally westerly to Rock Creek.

The K-V Associates' report noted the groundwater level at the Henfield property was approximately 3.0 to 4.0 feet below the ground surface during the period of November 1980, to January 1981. Private well logs in the vicinity report static water levels from 4 to 10 feet below the ground surface. Private well locations are shown in Figure 2-10.

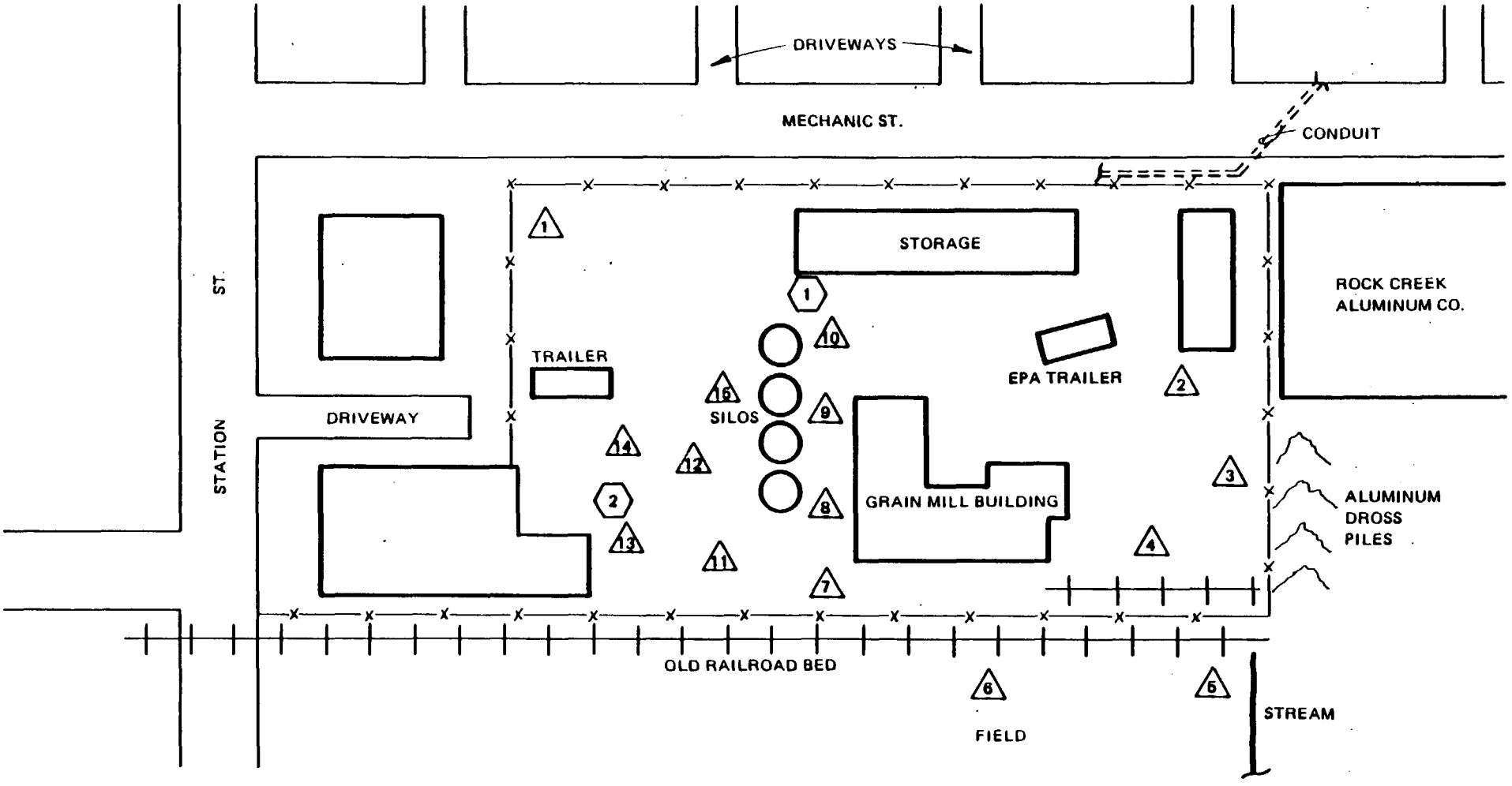
2.4.5 Air Quality

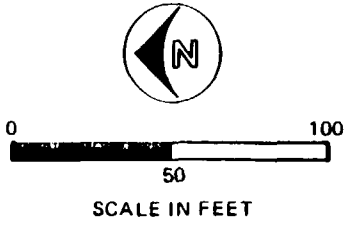
Air quality in Ashtabula County is generally good. As of July 1, 1982, the area is classified as attaining the National Ambient Air Quality Standards (NAAQS) for the criteria pollutants of total suspended particulates (TSP), sulfur dioxide (SO_2), carbon monoxide (CO) and nitrogen dioxide (NO_2). The area is classified as nonattainment for oxidants (O_3) as is most of Ohio. No known ambient air sampling for the criteria pollutants has been conducted near the Old Mill site.

During immediate removal activities at the Old Mill site on September 21, 1982, TAT team personnel monitored the air at the Old Mill site. Three 8-hour air samples were collected, two on the Henfield property and one on the Kraus property (about 10 feet from the 30 drums "discovered" and involved in the county deputy hospitalization incident). In addition, an HNU and OVA were used to monitor air in 15 locations on the Henfield property. Locations of air monitoring and sampling are shown in Figure 2-11. Results of the three 8-hour charcoal tube samples revealed no volatile priority pollutants detected at an average detection limit of 40 ug/tube. Continuous monitoring detected from 1.0 to 8.0 ppm with the OVA (in survey mode calibrated to methane) and from 0.0 to 7.0 ppm with the HNU (calibrated to benzene with a 10.2 eV lamp).

Additional air monitoring was conducted on October 9, 1982 with HNU. One 7-hour composite sample was also taken on October 13, 1982. Results of the HNU air monitoring showed generally 1.4 to 8.0 ppm levels in various locations during drum loading. Peaks of 14 to 15 ppm were observed in area "C," south of the silos, during active drum removal and

Non-responsive





LEGEND

- TEMPROARY FENCE
- HNU/OVA READING AREAS
- AIR SAMPLERS (8 HRS.)

FIGURE 2-11
AIR SAMPLING AND MONITORING LOCATIONS AT HENFIELD PROPERTY SEPTEMBER 21, 1982
OLD MILL SITE

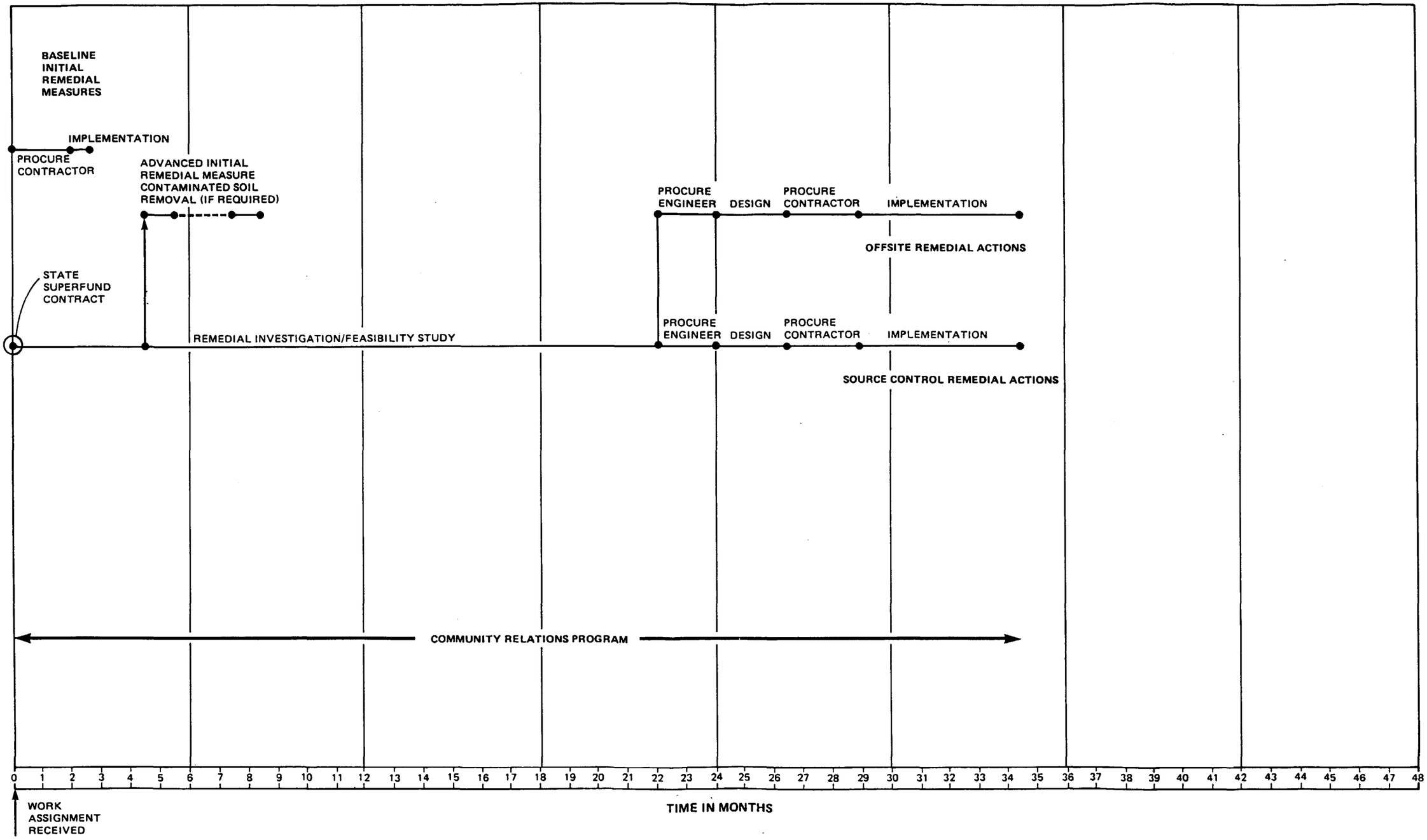


FIGURE 3-1
MASTER SITE SCHEDULE
OLD MILL SITE

3.0 REMEDIAL ACTIVITIES

3.1 REMEDIAL ACTION PLAN

3.1.1 Overall Approach to Site

The purpose of a Remedial Action Master Plan (RAMP) is to identify, define, and schedule a set of activities necessary to evaluate and implement remedial actions at an uncontrolled waste site. The RAMP includes Order-of-Magnitude cost estimates for future activities at the site. The plan is prepared from existing information and may require revisions as new information becomes available.

Sufficient data are not available to adequately characterize the Old Mill site during the preparation of this RAMP. Missing data will be obtained during the remedial investigation/feasibility study (RI/FS). It is not within the scope of a RAMP to generate new data.

The existing data are also inadequate to properly develop and evaluate source control or offsite remedial actions. Data collected during the RI/FS will fill in gaps in the existing data to allow the determination of the cost-effective source control and offsite remedial actions for the site.

Remedial actions discussed in this section are developed for the site in accordance with the National Contingency Plan (NCP) and include:

- Initial remedial measures
- Source control remedial actions
- Offsite remedial actions

3.1.2 Master Site Schedule

The master site schedule for the Old Mill site is shown in Figure 3-1. Both initial remedial measures and the RI/FS may begin within a reasonable time after the State Superfund Contract with the State of Ohio is signed and a work assignment is issued to the REM/FIT contractor.

3.1.3 Project Sequencing, Timing, and Correlation

Projects selected for investigation of potential remedial actions at the Old Mill site are scheduled to be performed in an efficient and practical manner. Project scheduling takes into account the fact that some tasks cannot be started until other tasks are complete; for example, groundwater samples cannot be taken until the monitoring wells are installed and developed.

Project scheduling also includes consideration of timing or the desirability of scheduling tasks to occur over the same time span. An example of timing is scheduling groundwater and private water sampling for the same time interval to reduce expenses.

Scheduling of RAMP projects also incorporates the correlation of investigation tasks. Correlation means the requirement that two (or more) tasks be conducted at the same time for practical reasons. An example of correlation of tasks is soil sampling conducted during the drilling for installation of monitoring wells.

This process of project scheduling, sequencing, timing, and correlation, is discussed as appropriate for each RI/FS task. The overall approximate schedule for the RI/FS is presented later in this section.

3.2 INITIAL REMEDIAL MEASURES

3.2.1 Objective

The purpose of initial remedial measures (IRM's) is to reduce imminent hazards to public health or the environment. At the Old Mill site, IRM's are considered necessary to reduce the potential of possible direct contact with contaminated soils on the Henfield property and contaminated runoff or seepage of the contaminated groundwater in the small stream flowing from the southwest corner of the property.

An environmental problem may exist from possible contamination of the small stream and downstream waterways, but such a potential cannot be assessed until completion of the RI/FS.

All IRM's recognize that the Superfund removal conducted between October and November 1982 resulted in removal of the drums of hazardous wastes.

3.2.2 Recommended Baseline Initial Remedial Measures

Two "baseline" IRM's have been identified to reduce public exposure. These are:

- Fencing of the Henfield property
- Installation of warning signs along the fence

The cost estimates for the baseline IRM's are Order-of-Magnitude estimates. This type of estimate is defined by the American Association of Cost Engineers as follows:

> An approximate estimate made without detailed engineering data. Examples include an estimate from cost-capacity curves, an estimate using scale-up

or scale-down factors, and an approximate ratio estimate. It is normally expected that an estimate of this type would be accurate within +50 percent and -30 percent.

Fencing

The Henfield property is partially accessible to the public from several directions around the property. It is recommended the property be enclosed by a fence to limit access by unauthorized persons. About 700 feet of fencing should be placed as shown in Figure 3-2. A gate should be installed at the entrance to the site to provide access to the property by authorized personnel.

The Kraus property is accessible on foot from any direction around the property. However, soil and surface water sampling and analysis in late 1982 showed that surface contamination appears minor. No imminent hazard to public health through physical contact appears to be present at the Kraus property. Therefore, fencing this property is not recommended.

The cost estimate, shown in Table 3-1, includes time for preparation of specifications, contract documents, subcontractor selection, and coordination with the subcontractor. Two trips to the site are included, the first to be with the subcontractor to identify and review the layout of the fencing and the second for observation of the completed fencing.

Warning Signs

It is recommended that warning signs be placed on the access gate and at intervals on the fence. The warning signs should state: DANGER--UNAUTHORIZED PERSONNEL KEEP OUT, in 3-inch high letters, visible from a distance of at least 25 feet. Figure 3-2 includes proposed warning sign locations.

The cost estimate for warning signs is shown in Table 3-1. The cost estimate assumes the contractor that installs the fencing also installs warning signs.

Press Release and Fact Sheet

Although not an IRM, a press release should be prepared to describe the fencing and signing and their purpose. A fact sheet, with more detailed information, should be prepared and distributed to local residents, officials and other concerned agencies or groups.

3.2.3 Potential Advanced Initial Remedial Measure

One "advanced" IRM has been identified as a potential action at the Old Mill site. There is known soil contamination

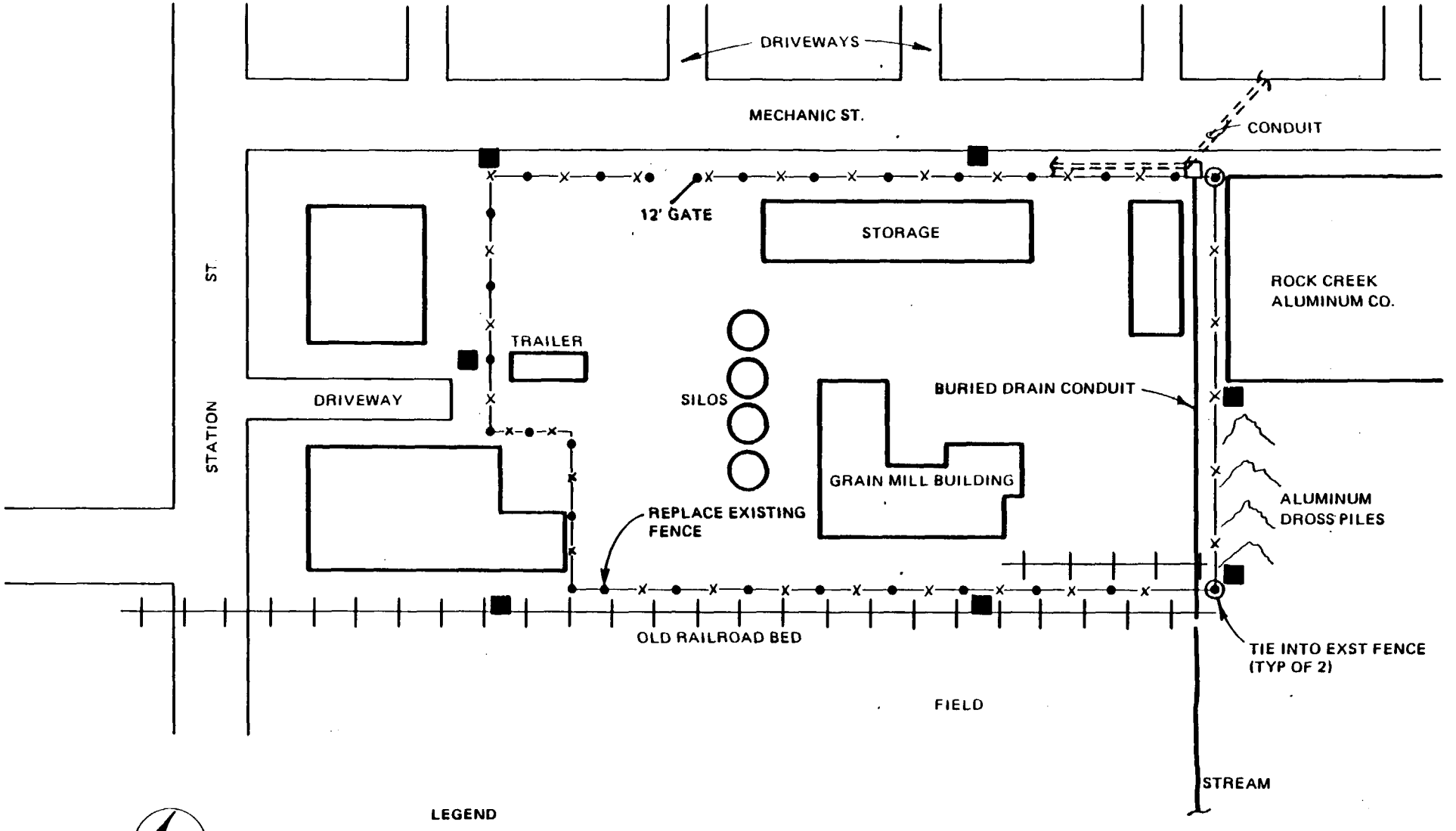


FIGURE 3-2
PROPOSED FENCE AND WARNING SIGN LOCATION AT HENFIELD PROPERTY
OLD MILL SITE

Table 3-1
ORDER-OF-MAGNITUDE COST ESTIMATE OF
BASELINE INITIAL REMEDIAL MEASURES
OLD MILL SITE
Rock Creek, Ohio
W65125.00

Initial Remedial Measure	Estimated Cost Ranges	
	Low	High
1. Fencing	$12,560	$19,700
2. Warning Signs	600	1,000
	$13,160	$20,700

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at the Henfield property, removal of the contaminated soil may be a cost-effective advanced IRM. Soil removal will reduce the hazard of public exposure to contamination onsite and reduce further groundwater contamination caused by precipitation percolation through the contaminated soils.

The recommendation to study the soil removal advanced IRM will be made immediately after the results of the onsite soil sampling are reviewed. If significant soil contamination is found, the advanced IRM will be recommended. The advanced IRM activity will begin with a "focused" RI/FS to evaluate the soil removal options. If determined to be cost-effective in the focused RI/FS, a contractor will be selected and the soil removed. Removal of contaminated soil from the site can be "fast tracked" as necessary.

No cost estimate was prepared for the soil removal advanced IRM because it will be performed only if the onsite soil sampling warrants. A cost estimate for the engineering portion of this IRM will be presented in the RI/FS work plan. The cost estimate for the soil removal work will be developed during the focused RI/FS for the soil removal IRM.

3.2.4 Cost Estimate and Schedule

The estimated costs of the baseline IRM's are shown in Table 3-1 and the totals range from $13,160 to $18,700. It is anticipated that it will take about 10 weeks to complete these measures as shown in Figure 3-3. About 6 weeks of this schedule is allocated to preparation of specification, contract documents, bidding, and subcontractor selection.

Estimated costs for the potential advanced (soil removal) IRM are in the work plan for the RI/FS activities. The estimated schedule for performance of the advanced IRM is shown in Figures 1-2, 3-1 and 3-6. The total duration of the advanced IRM is estimated as about 4.5 months.

3.3 REMEDIAL INVESTIGATION/FEASIBILITY STUDY

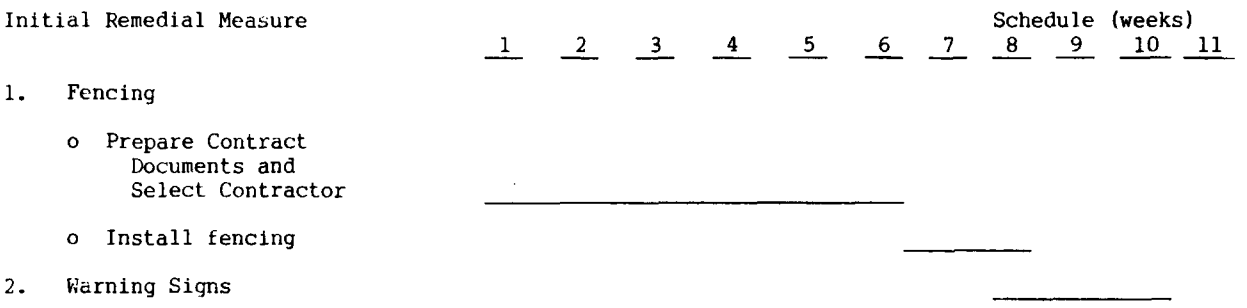
3.3.1 Objective

Before alternatives for remedial actions at the Old Mill site can be considered, sufficient data and information must be available to propose and evaluate those alternatives. A RI/FS is necessary to gather additional data.

Objectives of the RI/FS are:

- Determine if the Old Mill site poses an imminent health hazard or environmental problem.

Figure 3-3
SCHEDULE OF BASELINE INITIAL REMEDIAL MEASURES[a]
OLD MILL SITE
W65125.00



[a] Based on earliest start time.

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- Determine the characteristics and extent of remaining contamination on the site.

- Define the pathways of contaminant migration from the site as well as the impact of contaminants on potential receptors.

- Define onsite physical features and facilities that could affect contaminant migration, containment, or cleanup.

- Develop and evaluate viable remedial action alternatives.

- Recommend the most cost-effective remedial action alternative for the site.

- Prepare a conceptual design of the recommended alternative.

3.3.2 Scope of Work

The scope of work for the Old Mill site RI/FS includes nine general activities, each having several defined tasks. These activities are:

- Activity 1 - Preparation of work plan
- Activity 2 - Site definition activities
- Activity 3 - Detailed site characterization studies
- Activity 4 - Site evaluation
- Activity 5 - Remedial investigation report
- Activity 6 - Evaluation of remedial action alternatives
- Activity 7 - Alternative remedial actions feasibility report
- Activity 8 - Conceptual design
- Activity 9 - Project management

The following sections describe a work plan to accomplish the above activities. Cost estimates and a preliminary schedule are presented. The cost estimates for the RI/FS activities are Order-of-Magnitude level estimates as defined in Section 3.2.2.

All cost estimates are summarized in Table 3-2. Discussions on the basis for each cost estimate are included with each task. Estimated costs for sample analyses assume the use of EPA contract labs with the possible exception of optional PAH analysis on private well water supplies.

Table 3-2 (page 1 of 3)
COST ESTIMATES FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE
W65125.00

Activity	LOW COST ESTIMATES $Engineering	LOW COST ESTIMATES $Expense	LOW COST ESTIMATES $Subcontract	HIGH COST ESTIMATES $Engineering	HIGH COST ESTIMATES $Expense	HIGH COST ESTIMATES $Subcontract	RANGE OF TOTAL COST ESTIMATES $ Low	RANGE OF TOTAL COST ESTIMATES $ High
1.0 PREPARATION OF WORK PLAN								
1-1 Site Health and Safety Plan	1,470	270	1,000	2,200	460	1,500	2,740	4,160
1-2 Prepare Work Plan	6,100	640	-	9,150	960	-	6,740	10,110
Subtotal	7,570	910	1,000	11,350	1,420	1,500	9,480	14,270
2.0 SITE DEFINITION ACTIVITIES								
2-1 Geophysical Survey	7,480	1,650	8,400	11,220	2,480	12,600	17,530	26,300
2-2 Topographic Survey	4,950	500	14,700	7,430	750	20,000	20,150	28,180
2-3 Gather Additional Data	6,050	440	-	9,080	660	-	6,490	9,740
Subtotal	18,480	2,590	23,100	27,730	3,890	32,600	44,170	64,220
3.0 DETAILED SITE CHARACTERIZATION								
3-1 Sampling and Analysis of Soil	10,100	3,410	45,450[a]	15,000	5,120	68,000[a]	58,960	88,120
3-2 Installation of Groundwater Monitoring Wells	9,950	3,400	18,600	14,930	5,100	27,900	31,950	47,930
3-3 Sampling and Analysis of Groundwater, 1st and 2nd Quarter	25,500	9,300	45,360[a]	38,250	13,950	68,040[a]	80,160	120,240
3-4 Sampling and Analysis of Private Water Supplies and Sumps	6,400	1,980	13,400[a]	9,600	2,970	20,100[a]	21,780	32,670

Table 3-2 (page 2 of 3)
COST ESTIMATES FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE
W65125.00

Activity	LOW COST ESTIMATES $Engineering	LOW COST ESTIMATES $Expense	LOW COST ESTIMATES $Subcontract	HIGH COST ESTIMATES $Engineering	HIGH COST ESTIMATES $Expense	HIGH COST ESTIMATES $Subcontract	RANGE OF TOTAL COST ESTIMATES $ Low	RANGE OF TOTAL COST ESTIMATES $ High
3-5 & 3-6 Sampling and Analysis of Henfield and Kraus Property Drainage Stream Sediment	13,240	2,590	28,850[a] 5,640	19,860	3,890	43,300[a] 8,460	50,320	75,510
3-7 Sampling and Analysis of Private Wells for PAH Compounds (Optional)	3,000[d]	1,100[d]	6,300[a,d]	4,500[d]	1,650[d]	9,450[a,d]	10,400[d]	15,600[d]
3-8 Sampling and Analysis of Groundwater, 3rd and 4th Quarters (Optional)	25,500[d]	9,300[d]	45,360[a,d]	38,250[d]	13,950[d]	68,040[a,d]	80,160[d]	120,240[d]
Subtotal	65,190 28,500[e]	20,680 10,400[e]	157,300[b] 24,240[c] 51,660[e]	97,640 42,750[e]	31,030 15,600[e]	235,800[b] 36,360[c] 77,490[e]	243,170[b] 110,110[c] 90,560[e]	364,470[b] 165,030[c] 135,840[e]
4.0 SITE EVALUATION	11,000	550	-	16,500	830	-	11,550	17,330
5.0 REMEDIAL INVESTIGATION REPORT	12,600	2,830	-	18,900	4,250	-	15,430	23,150
6.0 EVALUATION OF REMEDIAL ACTION ALTERNATIVES	23,260	2,550	6,000	34,890	3,850	7,500	31,810	46,240
7.0 ALTERNATIVE REMEDIAL ACTIONS FEASIBILITY REPORT	13,230	1,760	-	19,850	2,640	-	14,990	22,490

Table 3-2 (page 3 of 3)
COST ESTIMATES FOR THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE
W65125.00

Activity	LOW COST ESTIMATES $Engineering	LOW COST ESTIMATES $Expense	LOW COST ESTIMATES $Subcontract	HIGH COST ESTIMATES $Engineering	HIGH COST ESTIMATES $Expense	HIGH COST ESTIMATES $Subcontract	RANGE OF TOTAL COST ESTIMATES $ Low	RANGE OF TOTAL COST ESTIMATES $ High
8.0 CONCEPTUAL DESIGN	10,500	1,300	-	15,750	1,950	-	11,800	17,700
9.0 PROJECT MANAGEMENT	13,900	750	-	20,850	1,130	-	14,650	21,980
TOTAL	175,730	33,920	187,400[b]	263,460	50,990	277,400[b]	397,050[b]	591,850[b]
			54,340[c]			77,960[c]	263,990[c]	392,410[c]
	28,500[e]	10,400[e]	51,660[e]	42,750[e]	15,600[e]	77,490[e]	90,560[e]	135,840[e]

NOTES:

[a] EPA contract lab cost estimate.
[b] Includes sample analysis at EPA contract lab.
[c] Cost not including sample analysis.
[d] Optional task cost.
[e] Total of optional site characterization activities.

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Activity 1 - Preparation of Work Plan

The objective of this activity is to refine the scope, cost and schedule of the RI/FS discussed generally in this RAMP and to develop an implementation schedule and work plan.

Task 1-1 - Health and Safety Site Assessment. The objective of the health and safety site assessment is to determine, since the Superfund cleanup activities conducted by U.S. EPA during 1982, if there are areas within the site that present potentially hazardous chemical exposure levels in the air or soil. Such information will be useful in providing remedial investigators/workers with adequate personal protection equipment.

Available information on the sites, i.e., data on contaminated soil, groundwater, and structures will be examined to identify possible sources of chemical exposure hazards. A health and safety plan specific to remedial investigation site activities will then be prepared. The cost estimate assumes the existing site visit health and safety plan can be used with minor modification.

Task 1-2 - Prepare Work Plan. The work plan will set detailed project objectives, tasks and schedule for each activity of the RI/FS.

Subtask 1-2.1. The work assignment will be reviewed and disciplines necessary to complete the assignment will be determined. Appropriate team members, including U.S. and Ohio EPA staff, will meet with other appropriate regulatory agency personnel to discuss overall project objectives and approach, to discuss areas of sensitivity, to establish communications and reporting channels, and to coordinate with the community relations program.

Subtask 1-2.2. A site-specific quality assurance project plan should be developed. The plan will include any other needs specific to the work assignment such as specialized sampling and analysis or data management needs that result from project requirements.

Cost Estimate. The cost estimate assumes one meeting at U.S. EPA Region V in Chicago, Illinois, one meeting with Ohio EPA personnel in Twinsburg, Ohio, and revisions of the work plan occurring as a result of these meetings.

Activity 2 - Site Definition Activities

The objective of this activity is to define the physical characteristics of the site through geophysical studies and topographic surveys, and to establish onsite health and safety facilities for use by all field personnel. The effort to gather and evaluate any remaining existing data on the site is included under this activity.

Task 2-1 - Geophysical Survey. The objective of this task is to determine the location of subsurface geologic features at both the Henfield and Kraus properties.

A technical memorandum summarizing the survey and describing the results, including geological cross sections, would be prepared. The cost estimate is based on an assumption of $400 per acre for the required geophysical survey work. The schedule in Figure 3-6 is based on:

- Geophysical survey performed by subcontractor.
- Bid document preparation beginning after U.S. EPA review and approval of RI/FS work plan.
- Eight weeks to procure the subcontractor.

Task 2-2 - Topographic Survey. The objective of the topographic survey is to create a topographic map showing elevations and locations of all pertinent physical features of the Old Mill site. Such information is necessary for developing, screening, and selecting remedial actions, as well as for the actual design and contracting of the remedial actions.

Subtask 2-2.1. A legal description of the Henfield and Kraus property boundaries should be researched in Ashtabula County records and verified in the field. The intent is not to perform a property boundary survey but to confirm boundaries so that subsequent site characterization studies and remedial actions will not carry over into neighboring properties without appropriate permission.

Subtask 2-2.2. A topographic survey of both properties should be performed to determine horizontal distances of appropriate physical features relative to the property boundaries and vertical elevations relative to National Geodetic Vertical Datum (mean sea level). Both topographic maps should be produced with 1-foot contours and a scale of 1 inch = 50 feet. The horizontal and vertical control accuracy for these topographic maps should be, at a minimum, fourth order plane surveying.

Cost Estimate. The cost estimate assumes that approximately 20 acres will be surveyed. The cost estimate assumes no onsite work and the use of aerial photography to develop the topographic mapping.

Schedule. The schedule in Figure 3-6 is based on:

- Topographic work performed by subcontractor.
- Bid document preparation beginning after U.S. EPA review and approval of RI/FS work plan.

- Eight weeks to procure the subcontractor.

Task 2-3 - Site Safety Facilities. The objective of this task is to identify and provide site safety and decontamination facilities for the RI/FS tasks.

The cost estimate assumes that the site health and safety assessment recommends Level D protection for all onsite activities. Onsite permanent facilities would not be required for Level D protection. The cost estimate includes the use of disposable personal protective clothing and decontamination materials.

The schedule in Figure 3-6 assumes that the required site safety facilities will be described in the health and safety plan as part of Task 1-1.

Task 2-4 - Gather Additional Data. The objective of this task is to obtain a more complete file of available data. Based on the files reviewed for this RAMP, some additional data on the site may be available; for example, the well logs for private wells in the vicinity of the site.

The cost estimate was based on three weeks of effort to contact responsible persons, compile responses, and evaluate the additional information. The effort is expected to be performed as needed during the course of the RI/FS activities. As stated above, gathering additional data will occur as needed.

Activity 3 - Detailed Site Characterization Studies

The available data and information on the Old Mill site are insufficient to allow the selection, screening, and evaluation of remedial action alternatives. The following sections present a work plan for site characterization studies to obtain detailed site data.

Proposed detailed site characterization studies include:

- Sampling and analysis of soil
- Installation of groundwater monitoring wells
- Sampling and analysis of groundwater, 1st and 2nd quarters
- Sampling and analysis of private water supplies and sumps
- Sampling and analysis of small runoff stream water and sediments at Henfield property
- Sampling and analysis of small runoff stream water and sediments at Kraus property
- Sampling and analysis of private wells for PAH compounds (optional)

- Sampling and analysis of groundwater, 3rd and 4th quarters (optional)

Task 3-1 - Sampling and Analysis of Soil. The objective of sampling and analyzing soil is to collect data on the depth, characteristics, areal extent, and concentration of hazardous constituents both on and offsite. Onsite soil sampling will be conducted soon after the approval of the final RI/FS work plan so potential removal of contaminated soil, as an "advanced" IRM, can be fast tracked to minimize public hazard and groundwater contamination.

Subtask 3-1.1. Representative onsite soil samples should be collected at both the Henfield and Kraus properties. Sampling should be concentrated in the areas of known major contamination. Several surface soil samples have been collected at both properties in previous investigations. Available data from this work will be used to guide the proposed soil sampling and analysis at this site.

At each selected sampling location, samples should be obtained using hand coring methods to a depth of 10 feet or the water table, whichever comes first. Homogeneous samples from selected depths (assumed every 6 inches) will be selected for potential analysis. The number, depths, and locations of soil samples will be determined based on previous soil sampling data. All soil sampling will be performed prior to the installation of groundwater monitoring wells and completion of the geophysical task.

Subtask 3-1.2. Soil samples should also be collected offsite. Offsite locations near the Henfield property should include the private lots east and south of the site across the railroad tracks and near the drainage stream west of the site. Offsite locations near the Kraus property should be selected, as required, depending on contamination found onsite. One of the offsite soil samples for each property will be taken as a "background" soil sample to use for comparison with the other soil samples.

Subtask 3-1.3. The soil samples from each location and selected depth should be analyzed for:

- Routine inorganic analysis package from U.S. EPA CLP (see Appendix H)
- Routine organic analysis data package from U.S. EPA CLP (see Appendix H)

EP extraction tests should be run on selected soil samples. These test results will be required to determine whether

soil must be disposed in a secure landfill or can be hauled to a less expensive local facility.

Samples taken at depths below 6 inches should be analyzed if significant concentrations of contaminants are indicated in the preceding (overlaying) sample, except in areas where clean fill has been placed over contaminated soil. All soil samples will be investigated in the field with an HNU and/or OVA to determine the presence of volatile organic compounds. This screening process will be used with other observations to select soil samples for laboratory analysis.

All sampling and testing should conform to guidelines in the User's Guide to the U.S. EPA Contract Laboratory Program (CLP) prepared by the Sample Management Office of CLP and published August 1982. Most samples are expected to be "low or medium" concentration samples according to the CLP criteria.

Subtask 3-1.4. On selected soil samples, grain size analyses, Atterberg limits and other index property tests should be conducted. Data from these tests will be used to evaluate construction feasibility and costs of potential remedial alternatives. Soil samples used for analysis may be collected as part of this task or Task 3-2, Installation of Additional Groundwater Monitoring Wells.

Subtask 3-1.5. A technical memorandum discussing the soil sampling program should be prepared to describe the sampling procedure, sample locations and to present the test results. The memorandum should delineate the areal extent and depth of soil contamination as well as the chemical characteristics of the contamination.

Cost Estimate. The cost estimate for onsite and offsite soil sampling and analysis at the Old Mill site is based on:

- At the Henfield property, 20 onsite soil samples total for analysis; 12 offsite soil samples total for analysis.
- At the Kraus property, 20 soil samples for analysis.
- All analytical work by a U.S. EPA contract laboratory using routine procedures and scheduling, and Level D safety protection applicable at all sampling locations.

Schedule. The schedule in Figure 3-6 is based on:

- Soil sampling performed by the contractor.

- o Soil sampling begins one week after the final draft work plan is approved.

- o All soil samples collected over 2 weeks.

- o U.S. EPA contract laboratory results available 8 weeks after receipt of samples. (This schedule could be optionally shortened at extra cost for SAS sample processing.)

Task 3-2 - Installation of Groundwater Monitoring Wells. The objective of this task is to install groundwater monitoring wells on and near both the Henfield and Kraus properties. The combined network of monitoring wells will:

- o Provide hydrogeological data needed to evaluate groundwater flow conditions and to help guide potential future remedial actions.

- o Provide a groundwater monitoring network to detect contaminants, future movement of any contaminant plume and to assess the results of potential future remedial actions.

Subtask 3-2.1. The previously completed hydrogeology investigation by K-V Associates will be reviewed for data on the geology of the site. Technical specifications and contract documents should be prepared for the drilling, casing, screen installation and development of monitoring wells.

Subtask 3-2.2. Several borings with soil sampling should be made down to competent bedrock. These borings will establish depth to bedrock (shale is the anticipated bedrock and confining layer), and identify zones of higher hydraulic conductivity in the overlying unsolidated deposits. This information will also be used to determine screen depths for the monitoring wells.

Subtask 3-2.3. The wells should be constructed according to State of Ohio regulations for groundwater monitoring wells. The following general procedures should be used to construct these wells (where subsurface soil sampling, described previously, is combined with the well drilling, the procedures should be modified accordingly):

- o Decontaminate all drilling equipment, pipe and materials before drilling.

- o Rotary drill, with clean water and steel casing, a 4- to 6-inch exploratory hole to predetermined depths.

- Collect selected soil samples using soil exploration techniques such as a split spoon sampler at 5-foot intervals or change of strata after continuously sampling above static water table.

- Decontaminate soil sampling equipment between samples.

- Select desired screen depth, length, and material based upon available well log(s), resistivity survey and deep borings.

- Grout borehole below screen.

- Install casing with gravel pack around screen, if required, and seal the well annulus above the packing to the surface.

- Install protective, locking cap and grout between cap and well.

- Install protective concrete pad around casing at surface.

- Fully develop the well.

- Decontaminate all drilling equipment before proceeding to next hole.

- Conduct bore hole hydraulic conductivity tests on selected wells.

- Obtain top of well casing elevation.

This procedure assumes that all water used in the drilling process can be disposed of onsite. If this is impossible, all drilling water must be contained and disposed of in an acceptable manner. Disposal of all water used in drilling will be the driller's responsibility.

Subtask 3-2.4. A technical memorandum describing the well design and installation should be prepared to provide documentation of data obtained during the well installation program. These data include all drillers' logs, formation sample analyses, any water quality analyses, water level and top of casing elevations, and cross sections of the site.

Cost Estimate. The cost estimate for groundwater monitoring well installation at the Old Mill site is based on:

- At the Henfield property, 7 monitoring well nest locations onsite and near offsite toward the west for a total of 16 wells and about 200 feet of well

casing. A preliminary location plan of these wells is shown in Figure 3-4.

- At the Kraus property, 4 monitoring well nest locations for a total of 9 wells and 150 feet of well casing. Because mapping for the Kraus property is sketchy, a preliminary location plan was not prepared.
- Each well nest location has at least two well casings with screens at 5 to 10 feet and 10 to 15 feet. Level D protection should be used during installation.
- Three well nests have a third well with screen set just into bedrock.
- During installation, drilling water will be disposed of onsite without unusual cost.

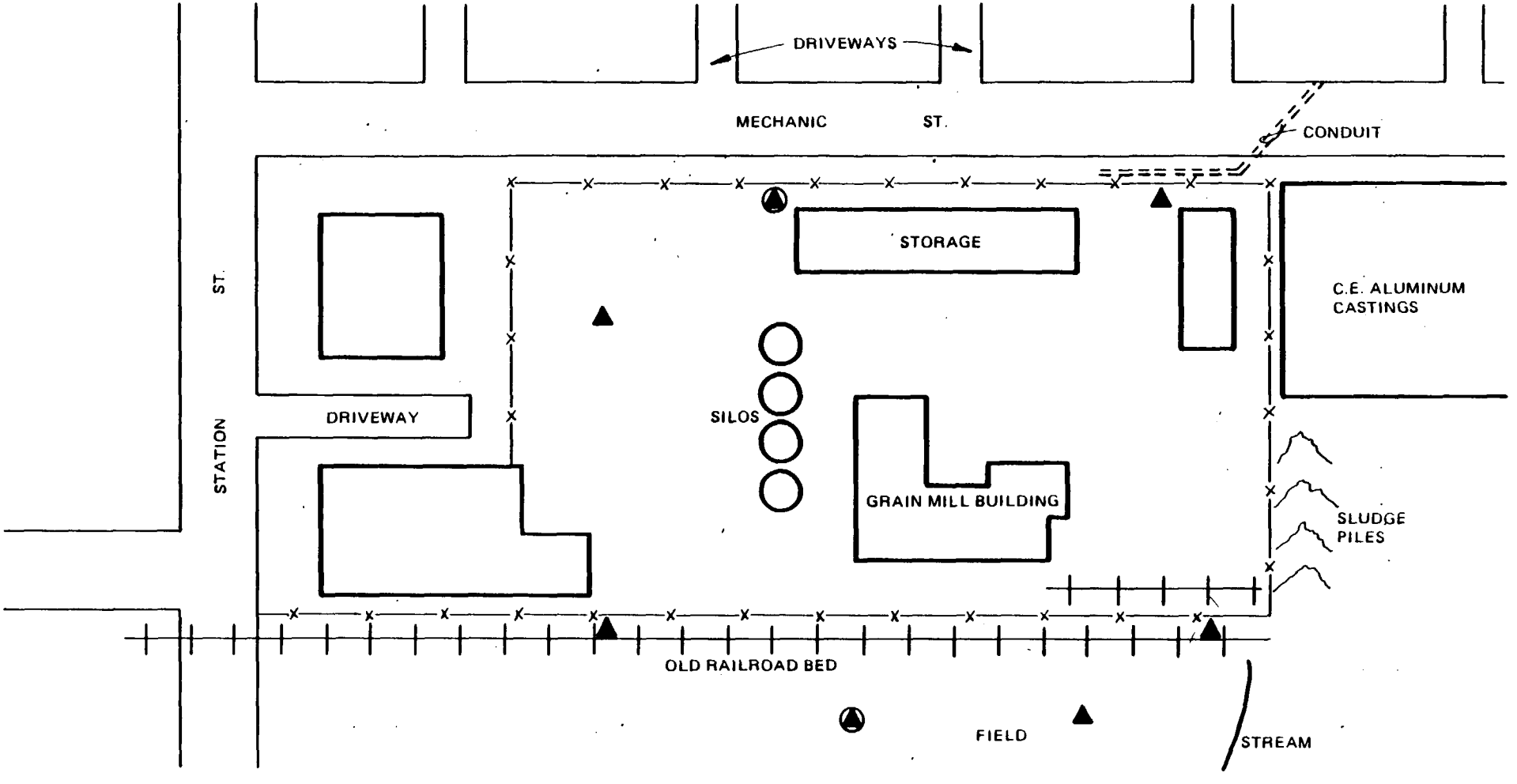
Schedule. The schedule in Figure 3-6 is based on:

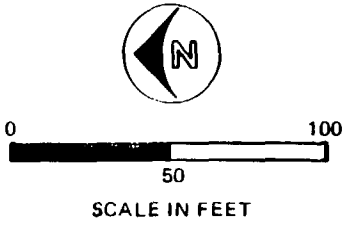
- Well installation performed by subcontractor.
- Bid document preparation beginning after U.S. EPA review and approval of RI/FS work plan.
- Eight weeks to procure the subcontractor.
- Four weeks from contract award to completion of well installation.

Task 3-3 - Sampling and Analysis of Groundwater, 1st and 2nd Quarter. Following installation, development, and stabilization of the groundwater monitoring wells, a groundwater sampling and analysis program should be conducted. The objective of the program will be to provide groundwater quality data and the location, both vertically and horizontally, of contaminated groundwater. Included with the first groundwater sampling effort, the two abandoned tanks on the Kraus property should also be sampled.

Subtask 3-3.1. Collect groundwater samples from all monitoring wells. Prior to collecting groundwater samples, the groundwater surface elevation should be measured at each well.

Subtask 3-3.2. One sample from each of the two abandoned tanks on the Kraus property should be taken. Based on the past operating practices at the Old Mill site, these samples should be assumed to be chemical wastes.





LEGEND

- FENCE
- 3 LEVEL WELL NEST
- 2 LEVEL WELL NEST

FIGURE 3-4
PROPOSED LOCATIONS OF GROUNDWATER MONITORING WELLS AT THE HENFIELD PROPERTY
OLD MILL SITE

Subtask 3-3.3. Two samples should be taken from the abandoned buildings onsite at the Henfield property. One sample should be the "foam" material (reported to be a urea-formaldehyde product) from the storage building housing "area G." Analysis of this sample should be performed to confirm the reported identity of the material and determine if it is classified as RCRA hazardous. This analysis can be performed by an Ohio State Laboratory or as an SAS through the U.S. EPA CLP.

The second sample should be material collected from the floor of the building housing "area B." This sample should be analyzed by the U.S. EPA CLP for the routine organics analysis package.

Subtask 3-3.4. Analyze the groundwater and two tank samples for:

- pH (water only)
- Specific conductance (water only)
- Inorganic analysis package from U.S. EPA CLP (see Appendix H)
- Organic analysis data package from U.S. EPA CLP (see Appendix H)

All sampling and testing should conform to guidelines in the User's Guide to the U.S. EPA Contract Laboratory Program (CLP) prepared by the Sample Management Office of CLP and published August 1982. All groundwater samples are expected to be "low" concentration samples according to the CLP criteria. The two tank samples are expected to be "high" concentration samples.

Subtask 3-3.5. A technical memorandum describing the groundwater sampling and analysis program should be prepared. The report should be updated as required to include the test results from each sampling event and to document the extent of contamination.

Cost Estimate. The cost estimate for groundwater and miscellaneous sampling and analysis at the Old Mill site is based on:

- Total of two sets of sampling and analysis performed, 1st and 2nd quarter sampling.
- One of the two sampling trips combined with other RI/FS activities.
- Two samples from the abandoned buildings on the Henfield property. Cost of "foam" analysis not included; sample from building for "area B" included.

- One sample from each of the two tanks abandoned on the Kraus property.

Schedule. The schedule in Figure 3-6 is based on:

- Sampling performed by contractor.
- First well sampling performed a minimum of 2 weeks after installation of the final groundwater well.
- Wells sampled quarterly, for 2 months.
- Two weeks allocated for sampling and technical memorandum.
- U.S. EPA contract laboratory results available 8 weeks after receipt of samples.
- Groundwater sampling and analysis continues into the remedial action evaluation effort.

Task 3-4 - Sampling and Analysis of Private Water Supplies and Sumps. The objective of sampling and analyzing private water supplies is to collect data on possible contamination by wastes previously stored on the Old Mill site. In addition to private wells, selected basement sumps should be sampled.

Subtask 3-4.1. The water supply of all structures within a one-half mile radius should be identified. A preliminary site plan showing the location of private wells has already been prepared by U.S. EPA, as shown in Figure 3-5. This plan should be used as the basis for this search. Well logs of each private well should be obtained where possible.

Subtask 3-4.2. Water samples should be obtained from selected private wells and basement sumps. Consent and cooperation of the owner should be obtained in advance of sampling.

Subtask 3-4.3. The water samples should be analyzed for:

- pH
- Specific conductance
- Inorganic analysis package from U.S. EPA CLP (see Appendix H)
- Organic analysis data package from U.S. EPA CLP (see Appendix H)

All sampling and testing should conform to guidelines in the User's Guide to the U.S. EPA Contract Laboratory Program (CLP) prepared by the Sample Management Office of CLP and

Non-responsive

loading operations. The results of the 7-hour composite air sample are shown in Table 2-10.

2.4.6 Ecology

The Old Mill site is in a rural area of northeastern Ohio. Grasses and trees grow along the edge of the property and along the small stream west of the site. The main work area of the site, which consists of silos, dilapidated buildings, and disturbed earth was devoid of most vegetation during the site visit for this RAMP (see Appendix A).

Through three waterways, runoff from the site eventually flows into the Grand River which in turn flows into Lake Erie. The Grand River provides drinking water for approximately 25,000 people in Ashtabula County.

2.4.7 Socioeconomics

The Old Mill site is in the Village of Rock Creek, Ohio. Several private residences are immediately across the street (Mechanic Street) east of the site, approximately 100 feet from the site boundary. A school is within one-half mile of the site. The nearest business is an industrial property, Rock Creek Aluminum Company, at the southern border of the site.

The residential population within a 3-mile radius of the site is reported to be approximately 1,400 persons. Rock Creek Aluminum Company employs approximately 30 persons.

2.5 ASSESSMENT OF POTENTIAL IMPACTS

2.5.1 Public Health and Safety

The chemical waste hazards at the Old Mill site are primarily caused by residual wastes which have seeped into the soil from leaking drums and spilled on the ground during site operations. Additional hazards caused by the spread of contaminants through surface runoff and groundwater movement may be significant. Potential effects on public health and safety may be caused by physical contact with toxic chemicals through contaminated surface runoff, groundwater,and contaminated soil.

The concentration of PCB's in either site groundwater and soil is apparently low. Although PCB's were found in a significant fraction of the drummed wastes, PCB's were identified in only two soil samples. Soil samples collected on October 19, 1982, had PCB concentrations reported as 2 ppm and 5 ppm ("Aro 1260") from areas "C," and "D and E," respectively. These soils were removed from the site during immediate removal activities.

Table 2-10
RESULTS OF 7-HOUR COMPOSITE AIR SAMPLE
FROM HENFIELD PROPERTY
FOR SAMPLE COLLECTED OCTOBER 13, 1982
OLD MILL SITE
W65125.000

Compound	Total Quantity ug/tube	Concentration in Air, ppb	TLV, ppm
Acetone	202	6.4	1,000
Methylethyl ketone	57.5	1.8	200
Toluene	789	25.0	100 (dermal)
Trichloroethylene	65	2.1	100
Xylene	673	21.4	100 (dermal)

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2.5.2 Environment

Contaminated soil remaining at the Old Mill site could affect biological systems by way of contaminated surface runoff and contaminated groundwater. Once in the surface water system, the toxic effects of waste inorganic metals and organic compounds could extend to fish, aquatic plants, a variety of wildlife, and finally humans.

2.5.3 Socioeconomics

The drummed wastes previously stored on the Old Mill site were removed in late-1982. The most obvious and immediate socioeconomic impacts caused by the drummed wastes, including imminent fire hazards, irritating nuisance odors, and general objectionable appearance, are gone. The Henfield property still appears as an abandoned dilapidated facility but does not have the obvious chemical hazards that existed before immediate removal activities.

Adverse socioeconomic effects are now reduced to the less visible concerns caused by potentially contaminated groundwater and surface runoff. Private citizens may be required to abandon private water wells and connect to the village water system.

It is possible that adverse socioeconomic effects may be felt some distance downstream along the small stream which carries the majority of Henfield property runoff. Economic, recreational, and adjoining property value derived from the waterways downstream of the Old Mill site could be reduced if contamination is shown to extend far from the immediate offsite area.

2.6 DATA LIMITATIONS

Data limitations noted in the development of this RAMP for the Old Mill site are:

- Groundwater monitoring onsite and offsite is very limited. The hydrogeology study by K-V Associates reported contaminated groundwater movement offsite toward the west. Monitoring wells were not installed.
- Data on near surface geology and/or confining layer(s) are limited.
- Data on depth of soil contamination are limited at the Henfield property. The characterization and extent of soil contamination is limited at the Kraus property.

- Data on the extent and characterization of site runoff contamination in the drainage conduit, near the east and west ends of the conduit, and downstream of the small stream west of the Henfield property are incomplete.

- Data on possible buried drums are limited as the investigation to locate possible buried drums on the Kraus property are limited to a series of test pits, although there are local "rumors" about buried drums at the site.

- Data on potential public water supply contamination or cross connection are limited.

A brief summary of the data required for remedial action evaluations is:

- Topographic and mapping data.

- Limited surface and more detailed subsurface soils sampling and analysis.

- Hydrogeologic study to define characteristics of subsurface soils, groundwater conditions, location, and movement, and groundwater contamination (if any).

- Private water supply sampling and analysis.

- Sampling and analysis of runoff stream water and sediment.

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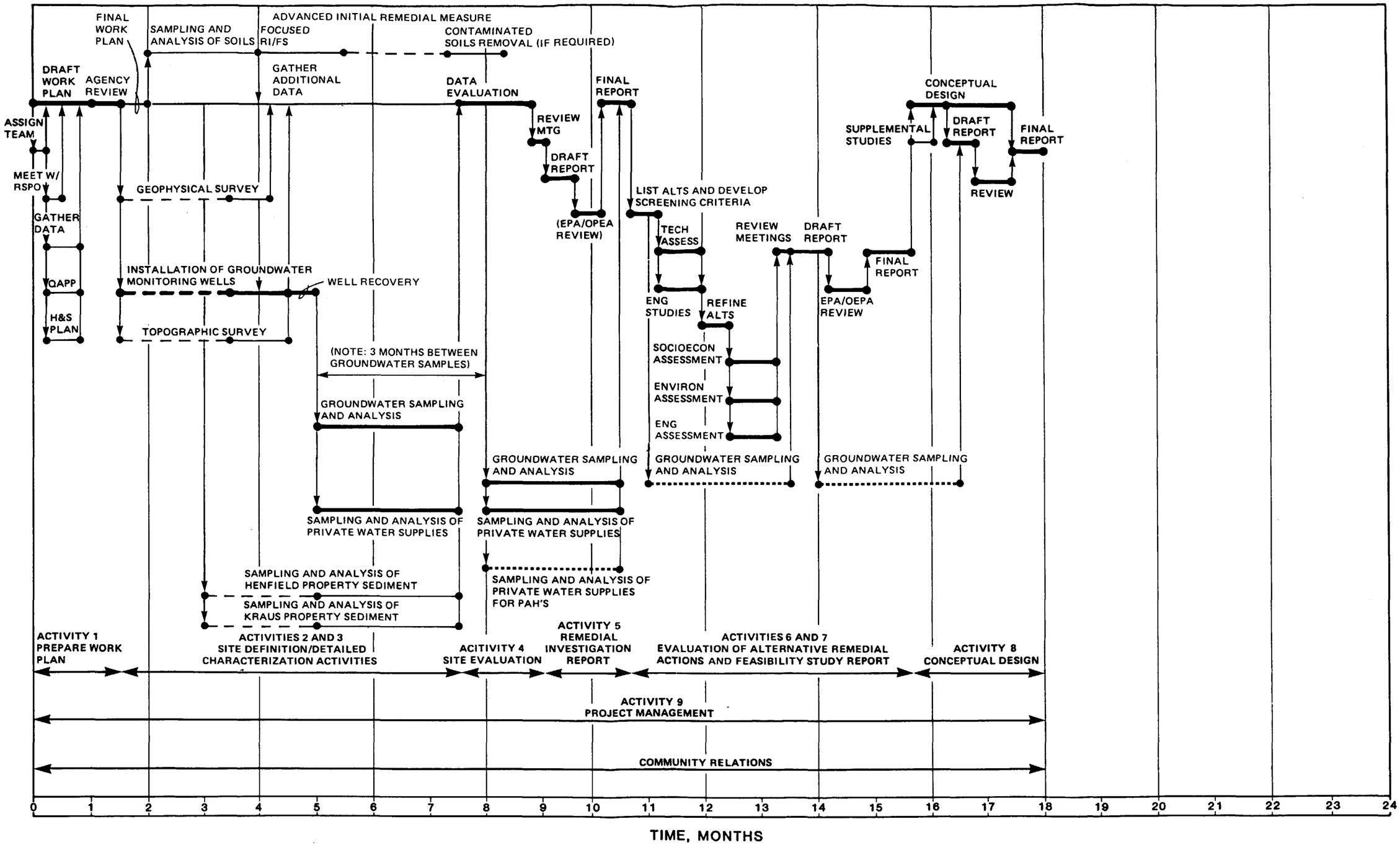

FIGURE 3-6
APPROXIMATE SCHEDULE FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OLD MILL SITE

published August 1982. All water samples are expected to be "low" concentration samples according to the CLP criteria.

Subtask 3-4.4. A technical memorandum describing the water supply sampling and analysis program should be prepared. The report should include the test results, location plan showing sampling locations, and available well logs.

Cost Estimate. The cost estimate for sampling and analysis of water supplies in the vicinity of the site is based on:

- Two separate sets of samples from each private water supply or sump
- Eighteen samples total, 10 samples followed by 8 additional samples at a later date
- One of the two sampling trips combined with other RI/FS activities

Schedule. The schedule in Figure 3-6 is based on:

- Sampling performed by prime contractor.
- Sampling performed at the same time as the first set of groundwater well sampling to reduce travel time.
- Two weeks allocated for sampling and technical memorandum.
- U.S. EPA contract laboratory results available 8 weeks after receipt of samples.

Task 3-5 - Sampling and Analysis of Henfield Property Drainage Stream Sediment. The objective of this task is to determine if water and sediment in the small drainage stream, which discharges from the southwest corner of the Henfield property, are contaminated.

Subtask 3-5.1. Water and sediment samples should be taken from the small drainage stream, possibly as far as the next stream, Rock Creek, downstream of the site. Sediment samples should be taken from the upper foot of sediment at each location.

All sampling and testing should conform to guidelines in the User's Guide to the U.S. EPA Contract Laboratory Program (CLP) prepared by the Sample Management Office of CLP and published August 1982. All water and sediment samples are

expected to be "low" concentration samples according to the CLP criteria.

Subtask 3-5.2. All samples should be analyzed for:

- pH (water only)
- Specific conductance (water only)
- Inorganic analysis package from U.S. EPA CLP (see Appendix H)
- Organic analysis data package from U.S. EPA CLP (see Appendix H)

EP extraction tests should be conducted on selected sediment sampled if significant contamination is found, and disposal in a landfill may be necessary.

Subtask 3-5.3. A technical memorandum describing the stream water and sediment sampling program should be prepared.

Cost Estimate. The cost estimate for sampling and analysis of water and sediment from the small runoff stream at the Henfield property is based on:

- All work limited to Henfield property
- Total of eight water samples and eight sediment samples
- Two sets of sampling are performed (ideally, to coincide with runoff events)
- Travel for sampling combined with other RI/FS activities
- Level D protection sufficient for sampling personnel

Schedule. The schedule in Figure 3-6 is based on:

- Sampling performed by subcontractor.
- Sampling events scheduled to coincide with groundwater sampling to reduce travel for contractor's supervisor.
- Eight weeks to procure the subcontractor.
- U.S. EPA contract laboratory results available 8 weeks after receipt of samples.

Task 3-6 - Sampling and Analysis of Kraus Property Drainage Stream Sediment. The objective of this task is to determine if the water and sediment in the small drainage stream which discharges from the north side of the Kraus property are contaminated by wastes from the site.

Subtask 3-6.1. Water and sediment samples should be taken from the small stream, possibly as far as Badger Run, downstream of the site. At each location, sediment samples should be taken from the upper foot of sediment at each location.

All sampling and testing should conform to guidelines in the User's Guide to the U.S. EPA Contract Laboratory Program (CLP) prepared by the Sample Management Office of CLP and published August 1982. All water and sediment samples are expected to be "low" concentration samples according to the CLP criteria.

Subtask 3-6.2. All samples should be analyzed for:

- pH (water only)
- Specific conductance (water only)
- Inorganic analysis package from U.S. EPA CLP (see Appendix H)
- Organic analysis data package from U.S. EPA CLP (see Appendix H)

EP extraction tests should be conducted on selected sediment samples if significant contamination is found, and disposal in a landfill may be necessary.

Subtask 3-6.3. A technical memorandum describing the stream water and sediment sampling program should be prepared.

Cost Estimate. The cost estimate for sampling and analysis of water and sediment from the small runoff stream at the Kraus property is based on:

- All work limited to Kraus property only
- Total of eight water samples and eight sediment samples
- Two sets of sampling are performed (ideally, to coincide with runoff events)
- Travel for sampling combined with other RI/FS activities
- Level D protection for sampling personnel

Schedule. The schedule in Figure 3-6 for Task 3-6 is based on the same assumptions described for Task 3-5.

Task 3-7 - (Optional) Sampling and Analysis of Private Wells for PAH Compounds. The objective of optional sampling and analysis of groundwater from private wells and sumps for PAH compounds is to collect specific data on contamination by this specific category of organic compounds. Fluorescence spectroscopy revealed indications of PAH compounds in near surface groundwater at the Henfield property. Several PAH compounds are carcinogens. Special attention to the

potential presence of these compounds in near surface groundwater is warranted, if groundwater analyzed under Tasks 3-3 and 3-4 indicates the potential for PAH contamination.

Subtask 3-7.1. Groundwater samples should be obtained from selected private wells and basement sumps. Consent and cooperation of the well and/or sump owner should be obtained in advance of sampling.

Subtask 3-7.2. The groundwater samples should be analyzed for PAH and associated nitrogen and oxygen heterocyclic compounds.

All samples should be analyzed utilizing the U.S. EPA approved GC/MS protocol for measuring PAH compounds in groundwater. The specified procedure was developed during RI activities at the Reilly Tar and Chemical site in St. Louis Park, Minnesota, and has an average method detection limit of 5.0 ng/l (nanograms per liter).

Subtask 3-7.3. A technical memorandum describing the private well and sump sampling and analysis for PAH and related compounds should be prepared. The memorandum should be similar to the memorandum from Task 3-4 and include the PAH results, laboratory protocol, and all other records such as QA/QC information and sample chain-of-custody records.

Cost Estimate. The cost estimate for special sampling and analysis of private wells and sumps for PAH compounds is based on:

- One sample from each of 12 private wells or sumps
- Site trip and sampling time combined with the private well and sump sampling
- Cost of special PAH analysis at $360 per sample

Schedule. The schedule in Figure 3-6 is based on:

- Sampling and analysis performed by prime contractor.
- Sampling performed at the same time as the first round of groundwater well sampling to reduce travel time.
- Three weeks allocated for contact and coordination with residents, sampling, and technical memorandum.
- Laboratory results available 8 weeks after receipt of samples.

Task 3-8 - (Optional) Sampling and Analysis of Groundwater, 3rd and 4th Quarter. The optional 3rd and 4th quarter of groundwater sampling is similar in scope to Task 3-3. The optional groundwater sampling is shown on the schedule and cost summary table.

The purpose of the optional additional sampling is to further investigate groundwater quality based on results from the 1st and 2nd quarters of sampling. The feasibility study would begin after the 2nd round of groundwater sampling described in Task 3-3. If the optional additional groundwater work is considered necessary, the schedule of the feasibility study would be changed as needed.

Activity 4 - Site Evaluation

All data collected during Activity 3 will be evaluated to determine whether or not the residual waste materials and contaminated soil at the site present a hazard to human health or welfare, or to the environment. Existing standards will be reviewed to formulate conclusions and recommendations regarding the hazard potential of the site. A technical memorandum will be prepared summarizing the hazard evaluation process and presenting the results of the hazard assessment.

To determine the practicality of various alternative source control and offsite remedial actions, the following factors will be evaluated based on how they meet the project objectives:

- Ability to control onsite release or to reduce undesirable effects offsite
- Adverse environmental effects
- Feasibility, applicability, and reliability of remedial action
- Preliminary cost estimate indicator (high, low, medium) for both capital and operation and maintenance costs

The cost estimate for site evaluation is based on past experience involving evaluation of similar size sets of data. The cost estimate for this activity includes:

- One review meeting held at Ohio EPA Northeast District in Twinsburg, Ohio.
- Technical memorandum of 50 pages.

- Thirty copies of the TM for review meeting.

The schedule for site evaluation is based on the assumption that the site evaluation begins shortly after receiving the first set of groundwater, soils, runoff, and sediment analyses.

Activity 5 - Remedial Investigation Report

A draft remedial investigation report will be prepared to consolidate and summarize the data obtained and documented in previously prepared technical memoranda during the remedial investigation. The draft report will include a discussion of the remedial actions considered, recommendations regarding whether or not to proceed with the evaluation of remedial action alternatives, and the recommended remedial action alternatives that should be included in the evaluation. The draft remedial investigation report will be submitted for agency review.

A review meeting will be held with U.S. and Ohio EPA and other appropriate agency personnel to: 1) determine remedial action objectives, 2) identify alternative level operable units and associated remedial actions to be addressed in the feasibility study, and to 3) discuss the contents of the remedial investigation report. A list of operable units and potential remedial actions will be prepared by the project team prior to the meeting to provide a basis for the discussion.

On the basis of the review meeting, agreement on the remedial action alternatives to be carried into the feasibility study will be summarized in a project memorandum. A public community relations workshop or community involvement meeting may be held at this time.

Following review and meetings, review comments will be incorporated into the final report, which will be submitted for agency approval.

The cost estimate for the completion of the remedial investigation report is based on:

- Two separate meetings for review and discussion of the draft remedial investigation report.
- One review meeting held at U.S. EPA Region V headquarters in Chicago, Illinois, and one review meeting held at Ohio EPA offices in Twinsburg, Ohio.
- Final report of 350 pages.
- Ten copies of the draft report.

- Forty copies of the final report.
- Community relations program done in another activity.

Activity 6 - Evaluation of Remedial Action Alternatives

The objective of this activity is to evaluate alternative remedial actions on the basis of economic, environmental, and engineering criteria and to select an alternative or combination of alternatives for conceptual design and implementation. The level of detail used in these evaluations only identifies comparative or relative differences among alternatives.

Task 6-1 - Develop Listing of Potential Alternatives. Based on the report of Activity 5, alternative remedial actions will be further developed. The "no action" alternative will be included as a basis of comparison. It can become important if potential remedial actions represent a greater danger than the identified waste hazard itself or an appropriate engineering solution is not available.

Task 6-2 - Develop Screening Criteria. Screening criteria will be prepared to assess the remedial action alternatives. The factors addressed in developing the screening criteria include:

- Engineering
- Economic
- Environmental Effects

The environmental screening criteria may include "endangerment assessments" of two contaminants identified through remedial investigations at the site. These endangerment assessments will document the these specific hazards and toxic properties associated with these specific contaminants. The purpose of the endangerment assessments is to refute the "no action" alternative, i.e., demonstrate the necessity for remedial action.

Task 6-3 - Additional Engineering Studies. During the screening of remedial action alternatives, the project team will evaluate the field investigations completed during the detailed site characterization studies to identify any additional engineering studies which will be required to more completely evaluate the cost, the constructibility, applicability, or reliability of any alternative.

Task 6-4 - Technology Assessment. Since treatment and/or disposal of soil, sediment, groundwater, or surface water are potential remedial actions at this site, a technical assessment of treatment options should be conducted.

Task 6-5 - Refine Alternatives. Based on all the available data, selected alternative remedial actions will be refined and more fully developed. A detailed written description of each alternative, basic component diagrams for each alternative to be considered, major equipment needs and utility requirements, conceptual site layout drawings, and preliminary implementation schedule will be made.

Task 6-6 - Engineering Assessment. The engineering aspects of the alternatives will be assessed on the basis of acceptable engineering practices. The specific factors to be evaluated include:

- Reliability
- Established technology
- Suitability to control the problem
- Risks to construction and operational personnel health and safety
- Constructibility and operability in light of site conditions
- Maintainability and sensitivity to offsite upset
- Offsite transportation and disposal capacity requirements

Task 6-7 - Economic Assessment. Construction, operation and maintenance costs will be estimated for each remedial action alternative. The comparative cost impacts of health and safety requirements on construction and continuing operation and maintenance will be included in the cost estimates. The level of cost estimates prepared for this task will be Order-of-Magnitude. After completion of the cost estimate, a present worth analysis will be conducted.

Task 6-8 - Environmental Effects. The remedial action alternatives will be evaluated based on the environmental screening criteria developed. The comparative assessment will consider:

- The known adverse environmental effects of the alternatives
- The effectiveness of adverse effect mitigation measures
- The adequacy of source control measures
- The effectiveness of offsite control measures
- The public acceptability of the alternative
- The institutional and legal (environmental permits) constraints

Task 6-9 - Comparative Ranking of Alternatives. During this task, the assessments will be compiled, the alternatives ranked within each assessment category, and overall rankings prepared. This ranking will be based on professional judgment and will reflect U.S. and Ohio EPA input.

Task 6-10 - Comparative Ranking Review Meetings. Review meetings will be held to solicit input into the comparative ranking of the remedial action alternatives. The review meetings should include U.S. and Ohio EPA, and the U.S. Army Corps of Engineers. Corps of Engineers personnel should be included in these review meetings to familiarize them with the project, the remedial action alternatives considered, and to receive their input on engineering factors and constructibility.

Community relations meetings, in accordance with the Community Relations Plan, focusing on a clear description of the situation at the Old Mill site, advantages and disadvantages of each remedial action alternative, and its relative ranking should be held. Experts should be present to answer technical questions. A brief file memorandum will be prepared summarizing the review process and the comments received.

Cost Estimate. The cost estimate for the completion of the remedial action evaluation activity is based on:

- Two "endangerment assessments" are prepared.
- Four remedial action alternatives are analyzed.
- One review meeting held at U.S. EPA Region V in Chicago, Illinois, and one review meeting held at Ohio EPA offices in Twinsburg, Ohio.
- The community relations program is not included.

Activity 7 - Alternative Remedial Actions Feasibility Report

A draft report summarizing data developed during the evaluation of alternatives and documenting the alternative remedial actions assessment process will be prepared. On the basis of the entire evaluation process, one alternative or a combination of alternatives will be recommended for consideration in the conceptual design. This draft report will be submitted to U.S. and Ohio EPA for review.

Following receipt of review comments and approval of the recommended remedial actions, the Alternative Remedial Actions Feasibility Study Final Report will be submitted. The final report will incorporate the review comments and document the U.S. and Ohio EPA decision process.

The cost estimate for the completion of the Alternative Remedial Actions Feasibility Study Final Report is based on:

- o No meetings required for the completion of this document
- o Final report of 200 pages
- o Ten copies of the draft report
- o Forty copies of the final draft
- o Nontechnical community relations costs not included

Activity 8 - Conceptual Design

The conceptual design activity will be the mechanism by which the selected remedial alternative(s) are defined by the lead agency for implementation. The following scope of work addresses the conceptual design requirements, provides additional data that may be needed to prepare a design consistent with the objectives of the proposed remedial actions, and is intended to be sufficient to allow preparation of a Order-of-Magnitude level cost estimate. In addition, this information must be adequate for subsequent activities by the Corps. It is recommended that the Corps be included in reviews of work plans and work products during conceptual design activities.

Task 8-1 - Preparation of Conceptual Design Elements. The following conceptual design elements will be developed as required for the remedial actions selected:

- o A conceptual plan view drawing of the overall site, showing general locations for project actions and facilities
- o Conceptual layouts (plan and cross sectional views where required) for the individual facilities, other items to be installed, or actions to be implemented
- o Conceptual design criteria and rationale
- o Description of types of equipment required, including approximate capacity, size and materials of construction
- o Process flow sheets, including chemical consumption estimates and a description of the process
- o Operational description of process units or other facilities
- o Description of unique structural concepts for facilities as appropriate
- o Description of operation and maintenance requirements

- Discussion of potential construction problems
- Right-of-way requirements
- Description of technical requirements for environmental mitigation measures
- Additional engineering data required to proceed with design
- Construction permit requirements
- Order-of-Magnitude implementation cost estimate
- Order-of-Magnitude annual O&M cost estimates and duration of operating expenses
- Preliminary project schedule

Task 8-2 - Supplementary Activities. To supplement the conceptual design additional work may be required. Examples of some additional activities are:

- Review the community relations and environmental impacts of the remedial actions.
- Refine environmental permit and institutional requirements.
- Coordinate conceptual design with the Corps of Engineers to facilitate transition from predesign to final design.

Task 8-3 - Preparation of Draft Report. A draft report summarizing conceptual design data and information will be prepared and submitted to U.S. and Ohio EPA for review.

Task 8-4 - Draft Report Review. A draft report review meeting will be scheduled and U.S and Ohio EPA review comments will be discussed.

Task 8-5 - Preparation of Final Conceptual Design Report. The draft report will be finalized based upon U.S. and Ohio EPA review comments and submitted to U.S. EPA.

Cost Estimate. The cost estimate for the conceptual design is based on:

- One review meeting will be held at Ohio EPA offices in Twinsburg, Ohio.
- All conflicting review comments resolved by U.S. EPA in consultation with Ohio EPA.

- Final report of 100 pages including reduced drawings.
- Total of four drawings for conceptual design layouts and preliminary process diagrams
- Ten copies of draft predesign report
- Forty copies of final predesign report

Activity 9 - Project Management

This activity occurs throughout the RI/FS. General tasks of this activity include establishment of project records; review meetings with U.S. and Ohio EPA; preparation of monthly reports; ongoing monitoring of remedial investigations' staffing, budgets, subcontractor performance; and maintaining quality assurance programs.

The cost estimate is based on 5 percent of the total estimated RI/FS budget. Project management is shown as a continuous line in Figure 3-6 to represent that project management is always applied to the project as required.

3.3.3 Remedial Investigation/Feasibility Study Estimated Costs/Time Schedule/Deliverables

Table 3-2 presents the estimated costs for the Old Mill site RI/FS activities. A preliminary schedule for RI/FS activities is shown in Figure 3-6. The estimated critical path is shown in Figure 3-6 with the "bold line" task bars.

The following deliverables will be provided for the activities outlined in the RI/FS scope of work:

RI/FS ACTIVITY	DELIVERABLES
Activity 1	o Draft work plan (U.S. and Ohio EPA review) o Final work plan o Site health and safety plan (SH & SP) o Quality assurance project plan (QAPP)
Activity 2	o Geophysical study technical memorandum (TM) o Topographic map
Activity 3	o Soil sampling and analysis TM o Monitoring well installation TM o Groundwater sampling and analysis TM

	o Private water supply and sump sampling and analysis and PAH analysis TM o Henfield property runoff water and sediment TM o Kraus property runoff water and sediment TM
Activity 4	o Site evaluation TM o List of operable units and remedial actions
Activity 5	o Draft remedial investigation report (U.S. and Ohio EPA review) o Final remedial investigation report (U.S. and Ohio EPA review)
Activity 6	o Report on remedial action evaluations o Public comment summary memorandum
Activity 7	o Draft RI/FS study (U.S. and Ohio EPA review) o Final RI/FS study
Activity 8	o Draft conceptual design report o Final conceptual design report
Activity 9	o Project Management reports (monthly) and records

NOTE: Technical memoranda will not be submitted for agency review. They are intended for internal project control and performance. They will be included in final reports as appendices in many cases.

3.4 SOURCE CONTROL REMEDIAL ACTIONS

3.4.1 Objectives

Source control remedial actions include measures to prevent, reduce, or eliminate contamination by containing the hazardous wastes in place or removing them from the site. Appropriate actions can be formulated and analyzed in detail only after sufficient data have been generated to determine the extent and nature of the contamination, and to determine whether a significant public hazard or environmental problem exists at the site. Source control remedial actions may not be appropriate if most hazardous substances have already been removed by the cleanup activities or migrated off the site.

3.4.2 Remedial Action Alternatives

Alternative source control remedial actions that may be appropriate for the Old Mill site include:

- Continuous monitoring of the site with no removal of contaminated soil or structures and no containment activities.
- Chemical/physical fixation of the contaminated soil in place.
- Stormwater drainage control measures to prevent run-on and runoff with the potential to collect stormwater runoff for treatment or offsite disposal.
- Removing contaminated sediment or soil with onsite encapsulation or transport offsite for disposal at a hazardous waste landfill.
- Containing contaminated groundwater through slurry walls, groundwater dams, or clay filled trenches and clay capping.
- Withdrawal, treatment, and discharge of contaminated groundwater.

3.4.3 Order-of-Magnitude Level Cost/Schedule

Order-of-Magnitude level cost estimates for onsite remedial actions have not been prepared because of the wide range of potential remedial actions and the wide range of potential levels of effort for each remedial action.

3.5 OFFSITE REMEDIAL ACTIONS

3.5.1 Objective

Offsite remedial actions include measures to mitigate the effects of hazardous wastes that have migrated beyond the site.

3.5.2 Alternative Offsite Remedial Measure

Based on the results of the RI/FS, the following offsite remedial actions may be appropriate for the Old Mill site:

- Continuous offsite monitoring with no other mitigative measures.

- Removal of contaminated soil and disposal in an approved hazardous waste landfill.

- Removal and disposal of contaminated stream sediment in an approved facility.

- Provision for alternative water supplies.

3.5.3 Order-of-Magnitude Level Cost

Order-of-Magnitude level cost estimates for offsite remedial actions have not been prepared because of the wide range of potential remedial actions and the wide range of potential levels of effort for each remedial action.

GLT405/3

4.0 COMMUNITY RELATIONS ASSESSMENT

The community relations plan outlines action to be taken during the initial remedial measures and remedial investigation/feasibility study phases of the site work. The Public Affairs Office of U.S. EPA, Region V will have primary responsibility for the development and implementation of the community relations plan. The community relations plan for the Old Mill site is attached as Appendix E.

GLT405/4

5.0 SITE VISIT HEALTH AND SAFETY PLAN

The site visit health and safety plan prepared for this site is attached as Appendix F. The plan requires Level D protection with HNU monitoring for site visits. If other onsite activities are occurring, such as sampling, well drilling or construction, modifications to this site health and safety plan are required.

GLT405/31

Appendix A
SITE VISIT MEMORANDUM

MEMORANDUM

TO: Old Mill RAMP File

FROM: Randy Videkovich, Project Manager
John Fleissner, Project Engineer

DATE: February 28, 1983

JOB NO: W65125.00

RE: Old Mill Site Visit
Henfield and Kraus Properties

On February 28, 1982, prior to the actual site visit, we met Gregg Kulma of U.S. EPA Chicago, Region V, at the Cleveland airport at about 9:30 a.m. and then traveled to the U.S. EPA Eastern District Office (EDO). At the EDO, we met with the following persons for discussion of the Old Mill site:

- Joseph Fredle, U.S. EPA, OSC for Old Mill
- Deborah Berg, Ohio EPA, OSC for Old MIll
- Gary Gifford, Ohio EPA

Our meeting began at about 10:30 a.m. and concluded at about 12:15 p.m.

While at the EDO, we obtained a complete set of site Polreps, sampling and analytical data, and cleanup cost summaries from Fredle. We also reviewed and requested additional file materials from Ohio EPA files on the site.

After this meeting, we proceeded to the Old Mill site followed by Kulma and Fredle. We met Tom Gilgenbach, CH2M HILL, Milwaukee office, at the site. Gilgenbach was responsible for equipment and safety procedures at the site. He remained offsite at the point of entry to observe the inspection team and assist in decontamination.

We entered the site at 2:59 p.m. eastern standard time. The weather was overcast with light snow. The temperature was about 32°F with a light to moderate wind from the north.

First, we looked at area C where drums were stored between the silos and the main building. Then, we proceeded to the area where Stackpole staged drums for removal. We then looked at building G where seven drums containing nonhazardous wastes

were stored. From there we proceeded to building D which was used as storage for about 50 drums containing various hazardous substances.

We viewed the drainage ditch along the south side of the property and at the catch basin at the southeast corner. Fredle said there were four incoming lines to the catch basin, one from the north, one from the east entering from across the street, and two from the south, apparently from the Rock Creek Aluminum Co. facility. Fredle also indicated that the outlet line to the catch basin was not clogged. An HNU reading indicated a level of 2.5 ppm of organic vapors in the catch basin. A distinct "fuel oil" odor was noted near the catch basin grate.

We then proceeded to walk west along the southern boundary of the site above the buried storm sewer to the discharge point. At the outlet of the storm sewer there was an emulsified oil water surface layer extending approximately 10 feet immediately downstream.

From the storm sewer discharge we proceeded north along the abandoned railroad track to north of the silos. We looked at areas E and F where waste drums were originally stored. From there, we went to the Kraus property and looked at the waste drum site, backhoe pits Fredle made looking for buried drums, and the old drum storage area.

The following general comments reflect our observations about the Old Mill site:

- The Henfield property fencing consists of several barbed wire strands strung on dilapidated posts. The fence is practically down along most of the western property line. Public access is only partially restricted.

- The site visit team did not sign in upon arrival because the site was abandoned.

- The south side of the Kraus property is littered with junk. Magnetometer survey here appears impossible according to Fredle.

- The Kraus site is unfenced and public access is unrestricted.

- The ground was not snow covered. Several soil areas where drums were previously stored at the Henfield property were stained dark brown or black.

- Stains on the floor of the "area B" building were visible. Slight odor was noted in this building, although the HNU readings remained less than 1.0 ppm.

- As we prepared to leave the site, the village mayor arrived accompanied by a man and three children. Fredle and Kulma spoke with the mayor briefly. The children were carrying video recording equipment. Apparently, the man and children were at the site gate to "interview" the mayor on videotape as part of a youth or school project.

GLT405/22

Appendix B
CHRONOLOGY

CHRONOLOGY FILE

Date: 00/00/00
Description: Draft Superfund State Contract for a feasibility study at the Old Mill Rock Creek, Ohio site between the State of Ohio and the U.S. EPA. The draft contract includes a statement of work for a remedial investigation/feasibility study at the Old Mill site.

Date: 00/00/00
Description: A 12-point document was prepared for the Old Mill site stating the background, scope of work, proposed budget and list of recommended sources for remedial actions required for drum cleanup. The document's basis of evaluation included technical approach, corporate qualifications, and overall cost effectiveness. The report concluded with a written justification for limited competition for bidding on the drum removal remedial action.

Date: 00/00/00
Description: The water well standards and water well waivers compiled in a single set. Document numbers assigned: OAC-3745-9 and OAC-3745-41.

Date: 06/18/79
Description: Hand drawn map of three newly discovered toxic dump sites at the Old Mill site area. Map drawn by Don Watson and Joe Good, U.S. EPA Region V. Map notes site inspection by Joe Fredle, U.S. EPA on June 20, 1979.

Date: 06/18/79
Description: A summary report of the situation at the Old Mill site was prepared by Mark Bergman, Environmental Scientist, Ohio EPA. Report noted approximately 300 55-gallon drums stored in an open field. Labels on drums identified the following companys: Quacker Oats Company, the Upjohn Chemical Company, the Hughson Chemical Company, and the Hooker Chemical Company.

Date: 06/28/79

Description: Memorandum from Joe Fredle, EDO, U.S. EPA Region V, describing site inspection June 20, 1979, and information obtained from Mr. Jack Webb.

Date: 06/29/79
Description: Letter from Mark Bergman, Environmental Scientist, Ohio EPA, to Mr. William Kraus requesting written information concerning waste generator, waste identification, estimated volume, approximate inventory and companys contracted to remove the waste material. Letter sent by certified mail No. 277831.

Date: 07/03/79
Description: Report by Daniel C. Watson entitled "Final Report on Discovery and Inspection of Toxic Substances Dump Sites." Report describes the William Kraus, the Jack Webb, and the Jack Webb II sites. Data was obtained during inspections conducted June 18-19, 1979. Site descriptions and some chemical data are presented.

Date: 07/31/79
Description: Site visits conducted on June 18 and July 26, 1979, by Chris J. Khourey to assess potential hazards to public water supplies were reported. The summary report describes the need for determination of chemical identities at the site, detailed inventory and analysis, and a monitoring program of the public water supply based on specific chemical identities.

Date: 08/31/79
Description: Initial report was prepared on analytical results data set EDO-428 from U.S. EPA organic lab section. Six samples were analyzed. None of the samples showed detectable amounts of chlorinated organic compunds nor any of 22 selected base neutral priority pollutants. Some other organic compounds were identified and reported.

Date: 08/31/79
Description: The results of organic analysis, data

set EDO428 of the Old Mill samples were reported by Emilio Sturino, Chief Organic Lab Section CRL. In summary, none of the samples contained detectable amounts of chlorinated organics nor any detectable amounts of 22 selected base neutral "priority pollutants." Compounds identified in six of the samples were reported in the memorandum.

Date: 09/25/79
Description: Brief report was prepared on reanalysis of spills at Old Mill site, data set EDO-428. Two samples were reanalyzed for PCB's using GC with EC detector. PCB's were not detected at less than 2 parts per million.

Date: 05/02/80
Description: On May 1-2, 1980, a 3-man survey team from U.S. EPA sampled the Old Mill site. Seven different samples were taken with one additional duplicate for quality control. Samples included drainage water, spill material and contaminated soils. Sample locations were shown on an attached site map.

Date: 06/03/80
Description: Three flammability tests reported on three spill sample results showed all three spills to ignite readily. Samples were judged to demonstrate a fire hazard.

Date: 08/04/80
Description: Analytical results were reported from samples collected on May 2 through 8, 1980, at the Old Mill site. Samples consisted of drainage water, brine and oil spills, and two well water samples. All samples were analyzed for PCB's and nonpurgable organics. PCB's were detected at 7 ppm in one oil spill sample only. No organics were detected in the drainage water or the two well water samples.

Date: 08/06/80
Description: On July 23, 1980, the Old Mill site was inspected by Melinda Merryfield Becker, Ohio EPA. The conclusion states that the site presents a potential fire and

health hazard. Materials are stored close to residents and the lack of fencing enables children to enter the site. Materials should be disposed of as soon as possible, according to the inspector's reports.

Date: 10/06/80
Description: A memorandum was prepared by a TAT team following investigation of the Old Mill site (no date specified). Approximately 1,000 drums were reported with eight generators' names identified. Drums were reported leaking. A potential threat to surface waters was identified.

Date: 10/20/80
Description: U.S. EPA identification and preliminary assessment and site inspection report was prepared by Daniel C. Watson, U.S. EPA Region V. Reports described 400-500 decayed chemical drums located at the Old Mill site. Photographs and site map were included. Solvent fumes were reported to be strong in the area.

Date: 10/26/80
Description: On October 17, 1980, Mr. Ken Harsh, Ohio EPA, with Jim Irwin and Mike Dalton, sampled and inspected the Old Mill site. Samples were taken from 76 drums including 36 solvents, 14 waste oils, 8 drums from Hughson Chemical, and 9 drums with resins, 9 drums with other materials. Mr. Harsh estimated site cleanup should be easy and cheap. Rough cost estimates were presented.

Date: 11/19/80
Description: Memorandum from Daniel C. Watson, Physical Scientist, U.S. EPA Region V, describes conditions at the Old Mill site as of 11/12/80. Conditions were reported to be essentially unchanged since site sampling performed in May 1980.

Date: 11/21/80
Description: In Polrep 1 by Joe Fredle, OSC, Fredle reported an estimated 1,000 drums and runoff were contaminated with mercury, arsenic, and chromium. He recommends a study to determine extent of

contamination. He requests $10,000 from 311 fund for study.

Date: 01/00/81
Description: In January 1981, a groundwater study was published by K-V Associates for the Old Mill site and submitted to the U.S. EPA emergency spill response section, Region V. Data showed complex groundwater movement with clearly documented discharges of aromatic organics from the Rock Creek site. Groundwater observation holes were excavated in 17 locations onsite and 16 near site and downstream locations. Data were taken from two periods: November 21-24, 1980, and January 1-4, 1981.

Date: 01/05/81
Description: The analysis of a composite sample taken from 76 drums on October 12, 1980, was reported. About 130 to 200 individual compounds were detected most of which were substituted hydrocarbons, aromatics, ketones, alcohols, polynuclear aromatics, nitrogenous chlorinated and sulfur substituted compounds. No PCB's at concentrations over 10 parts per million were detected in this sample. Compounds generally were considered more of a fire hazard than a severe toxicological hazard.

Date: 01/23/81
Description: In a letter from William B. Kerfoot of K-V Associates to Mr. Joseph Fredle, OSC, preliminary results from site samples obtained earlier are presented. Data showing elevated concentrations of aromatic hydrocarbons at the site are shown with site drawings showing the locations of the elevated concentrations.

Date: 02/03/81
Description: In Polrep 2 by Joe Fredle, OSC, Fredle reports K-V Associates' findings and considers the site an imminent hazard that is actionable under 311. He recommends liquid drum sampling and removal. Fredle requests an additional $45,000.

Date: 05/07/81
Description: A site safety plan was prepared by Ecology and Environment for the FIT team site work. SSP was prepared for a proposed investigation dated May 17, 1982. The purpose of this investigation was to perform air monitoring at the site.

Date: 06/01/81
Description: An emergency action plan was prepared for the Old Mill site. The action plan described a summary of the history and general information regarding the site, site status and recommended actions. Report was written in the summer of 1981 (assumed as June 1) by TAT.

Date: 08/06/81
Description: On May 21, 1981, an offsite inspection was conducted by Mr. Paul Hess from Ecology and Environment, accompanied by Bob Wachsmuth. No samples were taken during the visit. Several photographs were taken and are attached to the offsite inspection report. Following this inspection, Mr. Joe Fredle, OSC, asked to discontinue activities at this site because he (Fredle) was investigating potential remedial actions already.

Date: 09/29/81
Description: In a Polrep from Joseph Fredle, OSC, regarding Old Mill site, he states that approximately 1,000 chemical waste drums are on the site. Chemicals have been previously traced to contaminated groundwater. A high fire hazard exists. Responsible parties are named. Recommendations include $50,000 of emergency Superfund monies for sampling, analysis, and categorization.

Date: 10/27/81
Description: In Polrep 4 by Joe Fredle, OSC, Fredle reports a meeting between generators and state and Federal representatives on October 22, 1981, to coordinate cleanup. Demand letters are ready for signature.

Date: 11/04/81
Description: In Polrep from Joseph Fredle, he states

demand letters were signed and sent November 3, 1981. Cleanup projected to start November 9, 1981. Drum sampling will be performed by Environmental Pollution Control Services (EPCS) with TAT assistance. Hughson and Rockwell will identify their drums.

Date: 11/30/81
Description: A site survey was conducted on November 12-13, 1981, by Mr. Harry V. Thomas of Rockwell International. Thomas recommended that Rockwell Plastics-Ashtabula accept responsibility for the full cost of disposal for the contents of containers located in three areas described in detail in an internal Rockwell letter to John Trimble.

Date: 12/08/81
Description: Polrep 6 from Joe Fredle, states cleanup work was started November 9, 1981. Sampling was completed November 13, 1981, 926 drums were sampled in total. Hughson completed removing 311 full drums and 22 empties. Premix removed 45 drums. On November 24 capability testing was completed by TAT.

Date: 12/14/81
Description: Compatability analysis performed by Chem Clear (a liquid waste pretreatment service from Cleveland) was reported to Joe Fredle, OSC, for the Old Mill site. Samples were delivered to Chem Clear on December 3, 1981. Disposal costs were given in the letter report.

Date: 01/07/82
Description: Ms. Debbie Berg, Ohio EPA, prepared an inter-office memo on the Old Mill site to-date. Memo describes negotiations with identified responsible parties. Memo also describes results from November 1981 drum sampling and analysis, including estimated quantities of waste categories.

Date: 01/19/82
Description: In Polrep 7 by Joe Fredle, he states that the waste generators MFG, Stackpole Carbon, and Wrapco are considering removal of their drums. Site was

covered with 2 feet of snow and ice preventing further work at this time.

Date: 02/04/82
Description: Ohio EPA published formal news release regarding Rock Creek site. News release describes the $50,000 in emergency Superfund monies and the removal of 300 drums by identified generators. News release also describes $10,000 of Superfund money to be spent for laboratory analysis of remaining waste.

Date: 05/14/82
Description: Ms. Debbie Berg of Ohio EPA compiled a set of background data on the Old Mill site and submitted this information to Mr. Mike McCarrin of Ecology and Environment Co. Background data set included site maps, description and history of the site, location of existing private wells, some data on waste composition, and a previously published site safety plan.

Date: 05/29/82
Description: On this day Mike McCarrin and Scott Byron conducted a site inspection with members of Ohio EPA. Inspection purpose was to determine if site could be included on Mitre drilling program. At this time, Ohio EPA has decided that the site will be drilled with the Mitre program.

Date: 06/30/82
Description: In Polrep 8 by Joe Fredle, he requests an additional $24,000 be committed to Contract No. 68-95-001 for additional cleanup work. Stackpole Carbon was negotiating for removal of 130 of their drums. Fredle was considering using Rollins in New Jersey for incineration. Drum removal was tentatively scheduled for July 19, depending on analytical results.

Date: 07/06/82
Description: A certified letter mailed to Mr. George Liviola, Secretary Treasurer, Ashtabula County Septic and Waste Services Inc. from Valdas V. Adamkus, Regional Administrator, U.S. EPA Region V, made a

formal request for information regarding the activities of Ashtabula County Septic and Waste Services Inc.

Date: 07/06/82
Description: An information request pursuant to Section 104(E) of CERCLA was prepared as a legal document and signed by Valdas V. Adamkus, Regional Administrator, U.S. EPA Region V, regarding the matter of Ashtabula County Septic and Waste Services Inc., Ashtabula, Ohio.

Date: 07/08/82
Description: A certified letter mailed to Mr. George Liviola, Jr., Secretary Treasurer of the Ashtabula County Septic and Waste Services Inc. from Mr. Joseph Fredle, OSC, for the Old Mill site, requests three specific actions at the site including removal of all drum materials, removal or treatment of all contaminated soils, and development of a program to determine groundwater contamination. Letter states that cleanup will commence July 19, 1982, if no answer is received by July 14.

Date: 07/18/82
Description: Memorandum from Eileen T. Mohr to Melinda Becker, Ohio EPA, concerns general geology and well placement. Mohr states that the Groundwater Divison of Ohio EPA/NEDO believes that no groundwater monitoring wells should be drilled in the Old Mill site area.

Date: 07/20/82
Description: In Polrep 9 from Joe Fredle, stackpole begins removing drums July 19, 1982, Ashtabula County Septic and Waste Services, Inc. determined to be major hauler of drums to the site. Composite waste sample determined to be 625 parts per million of PCB's. Cleanup costs were expected to increase.

Date: 07/30/82
Description: In Polrep 10 from Joe Fredle, he described chronological report of actions from September 29, 1981, through the present. Presently, 750 to 800 drums remain onsite. Through composite

analysis, it was determined that the remaining liquids in the 21,000 gallons contained 655 ppm of PCB's. Work is delayed while funding is decided.

Date: 08/04/82
Description: A letter to Mr. George Liviola, Jr. of the Ashtabula County Septic and Waste Services Inc. from Eileen R. Blume, Counsel for U.S. EPA, confirms a telephone conversation of July 30, 1982, extending the time for response to the initial request for information dated July 6, 1982. Extension is for 7 days with submittal to be mailed by August 6, 1982.

Date: 09/01/82
Description: In Polrep 11 by Joe Fredle, he detailed the liquid analysis from 600 drums by ERT will begin August 24, and is expected to end on September 13, 1982. Thirty additional drums were found in a field north of Old Mill site. Vapors hospitalized sheriff department deputy. Local citizen activity increased. Fredle requests TAT assistance to perform magnotometer survey of new field north of Old Mill site.

Date: 09/12/82
Description: In Polrep, Fredle describes the north field site. On September 12, 1982, eight people living near the site were sick with flu-like symptoms and hospitalized. Congressional and media interest was shown in this situation. Fredle requested $5,000 for immediate removal of the 30 drums and contaminated soil. Fredle also requested CDC assistance for air monitoring and priority, one analysis to determine the chemical possibily causing the sickness.

Date: 09/14/82
Description: Correspondence from Wayne S. Nichols, Director of Ohio EPA to R.J. Casey, Executive Director, ORTA, requests assistance on the removal of 25 to 30 waste drums involved in local acute sickness incident.

Date: 09/20/82

Description: In Polrep 12 by Joe Fredle to Mr. Alan Humphrey, Fredle gives a description of present site status, major conclusions, recommended actions, estimated costs and options which were considered but rejected. Fredle requests immediate action based upon upcoming winter conditions, high fire hazard, high PCB hazard, and demonstrated cases of acute symptoms of illness caused by chemical exposure.

Date: 09/28/82
Description: Memorandum from Roger Hannahs, Ohio EPA, to Wayne S. Nichols, Director Ohio EPA, describes the RRT meeting held by Joe Fredle on 9/20/82. Public meeting was held later on the same day.

Date: 10/05/82
Description: Sediment sampling at the Henfield and Kraus drainage areas was performed on October 6, 1982.

Date: 10/06/82
Description: In Polrep 13 by Joe Fredle, he describes the removal of PCB and chlorinated liquids from 82 drums. Other actions include the removal of 4,000 gallons of PCB liquids offsite for incineration and start of groundwater monitoring survey at private wells and other surface waters near site.

Date: 10/07/82
Description: In Polrep 14 by Joe Fredle, approximately 6,000 gallons of flammable nonchlorinated liquids were bulked from 250 drums. TAT personnel sampled private wells and surface water on October 6, 1982. Site work was expected to continue through the weekend.

Date: 10/08/82
Description: On October 5, 1982, TAT personnel took four soil samples from the new drum site and 21 water samples from residential wells and surface water in the Old Mill site area. Data reported in lab reports were attached to site visit memorandum.

Date: 10/12/82
Description: In Polrep 15 from Joe Fredle, he noted

that an additional 2,000 gallons of flammable liquid were located in and pumped out of drums. Inorganic liquid was sent to Chem Clear for disposal (500 gallons). Solidified sludges were sent offsite to Chem Clear for disposal (150 drums). Previously, bulk flammable liquid was rejected by disposer because of excessive water. The total cost spent to date is estimated at $62,200. According to plan, all material must be offsite by the end of this week.

Date: 10/13/82
Description: Miscellaneous notes by unknown author describe Fredle's conversation with Jack Webb on 12/8/81. Jack Webb claimed he was an employee of Western Nurseries (owned by Dearing) and corporate officer of Hydrosoil. Webb claimed that chemicals were to be used in potting soil.

Date: 10/15/82
Description: In Polrep 16 by Joe Fredle, he stated that an additional 1,000 gallons of flammable liquid was located and pumped out of drums, totalling 9,000 gallons to date. The 185 additional drums of solidified sludges were sent to Chem Clear for disposal. Total estimated cost to date is $89,500. PCB drums and sludges will be disposed by CECOS.

Date: 10/21/82
Description: In Polrep 17 by Joe Fredle, Fredle summarizes quantities removed from the site to-date. The cost for all operations to-date is estimated at $119,000. One to two inches of contaminated soil have been scraped into piles and covered with plastic. Composite samples were taken of each pile for analysis.

Date: 11/16/82
Description: On November 16, TAT personnel obtained 34 soil samples from sites determined by Joe Fredle. Ten samples were sent to CRL for analysis; remaining samples were held. On November 17, TAT personnel took 15 water samples from wells and surface waters in Rock Creek. On

November 18, soil and water samples were delivered to CRL in Chicago. Analysis was to include PCB's and organic scans. Data were reported in a memorandum on November 24, 1982.

Date: 11/18/82
Description: A followup request for informtion was sent by certified mail to Mr. George Liviola, Jr. of the Ashtabula County Septic and Waste Services, Inc. by Eileen R. Blume, Counsel for U.S. EPA. The letter stated that litigation will be initiated if a response to a previous (July 6, 1982) letter is not received by November 26, 1982.

Date: 11/19/82
Description: In Polrep 18 by Joe Fredle, Fredle reports analytical results from soil samples. PCB concentrations are low at 2-5 ppm; some solvent contamination is shown. Soils were disposed at the Fondessy landfill near Oregon, Ohio. Test holes fail to show buried drums. Analysis results from the four drum samples at new drum site taken on September 14, 1982, were given.

Date: 12/09/82
Description: A memorandum by Debbie Berg, Ohio EPA, to Gifford, Ohio EPA, summarizes businesses which operated on Henfield's property. The responsible waste generators voluntarily removed the waste.

Date: 12/15/82
Description: In correspondence from Robert S. McEwen, Chief, Ohio EPA, Division of Public Water Supply, to Mayor and Council of Rock Creek, McEwen wrote that THM's detected in the village water was not a significant problem, but Ohio EPA is performing additional analysis.

Date: 12/17/82
Description: In Polrep 19 from Joe Fredle, Fredle states that data from well samples indicate that no significant contamination is flowing from the site. The soil onsite is still contaminated but it has been determined that there is

no need of future immediate removal action.

Date: 01/14/83
Description: A memorandum from Georgi A. Jones of the Center of Disease Control stated that the general consensus of the committee was that no emergency action was necessary at the Old Mill site at this time. Memorandum comments were stated to be preliminary in nature pending a site visit by Dr. Edith Welty of the CDC. Chemical contaminant levels found in the soils at the Old Mill site were considered to present a health risk based on significantly high levels of inorganics and some organic carcinogens.

Date: 01/20/83
Description: A fact sheet update was published by the U.S. EPA regarding the cleanup at the Old Mill site. The fact sheet contained data on well samples, site soils, and the CDC comment on the sampling data. The contact person given for Superfund community relation was Marcia Carlson (312/886-6873).

Appendix C
SAMPLING AND ANALYSIS OF HAZARDOUS MATERIALS AT THE OLD MILL SITE

Appendix C
SAMPLING AND ANALYSIS OF HAZARDOUS MATERIALS AT THE OLD MILL SITE

Various samples of drums, spills, contaminated soils, and groundwater were taken and analyzed at the Old Mill site since 1979. A summary of reported sampling events is presented in Table 2-2. The sampling and analysis of the drums and wastes already removed is discussed in this appendix.

On June 19, 1979, various spills, soils, waste, and drainage water samples were collected at the Kraus property. On May 2-8, 1980, similar samples were collected at the Henfield property. Results of these analyses are shown in Tables C-1 and C-2, respectively. These data indicate organic wastes including waste oils, phthalates, and solvents including xylenes were present on the site. Inorganic analyses indicate a variety of elements found in waste brine which was reportedly stored at the site in the concrete silos which leaked.

On October 12, 1980, the OEPA obtained a composite sample of 76 drums on the Henfield property. These samples were analyzed using GC/MS which indicated the presence of 150 to 200 organic compounds. The laboratory report indicated that some of the compounds had low flash points, less than 100°F, and were experimental carcinogenic or neoplasmic (tumor-causing) agents. The general compound categories identified were:

Compound Category	Number of Compounds
Polycyclic or polynuclear aromatics	31
Substituted or straight chain hydrocarbons	27
Miscellaneous	15
Alcohols	14
Aromatic compounds	13
Amines	12
Cyclic or substituted cyclic compounds	9
Chlorinated compounds	4
Oxygen-containing and ketone compounds	5

Fifty specific compounds identified in order of decreasing concentration are listed in Table C-3.

Many of the compounds listed in Table C-3 are polynuclear aromatic hydrocarbons (PAH). The PAH category of organics includes potent mutogenic, teratogenic, and carcinogenic compounds. In general, the more toxic PAH compounds are

Table C-1
SUMMARY OF KRAUS SITE SAMPLING
PERFORMED JUNE 19, 1979 BY WATSON, U.S. EPA
W65125.00

Sample Number[a]	Sample Location/Description[a]	Compound(s) Identified[b]	Concentration[b] mg/kg
79EW05S01	Sediment from around barrels in field	Aliphatic hydrocarbons (fuel oil)	11 to 53
79EW05S02[c]	Oil under burn area - sediment	Bis-(2-ethylhexyl) phthalate	2,867
		Di-n-octyl phthalate	557
79EW05S03	Sample from open drum - liquid	Amorphous oil (no toxics detected)	-
79EW05S04[c]	Water from drainage ditch	3,6-dimethyl-4-heptene-3-one	13
		Aliphatic hydrocarbons (fuel oil)	2 to 36
79EW05S05	Black substance scraped off drum	Ethylbenzene	432
		o-Xylene	2,543
		p-Xylene	791
		p-methyl phenethyl alcohol	831
79EW05S06	Sediment from soil next to leaking drum	2,6-Bis(1,1-dimethylethyl)-phenol	7,935

NOTES:

[a] Data from "Final Report on Discovery and Inspection of Toxic Substances Dump Sites," by D.C. Watson, U.S. EPA, EDO, July 3, 1979. (Document No. 01-5V25,0/0015).

[b] Data from U.S. EPA Memorandum by Emilio Sturino, U.S. EPA Organic Lab Section, Data Set EDO428, August 31, 1979. (Document No. 01-5V25.0/0017).

[c] Reanalysis reported September 25, 1979, found PCB concentrations less than 2 ppm. (Document No. 01-5V25.0/0016).

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Table C-2
SUMMARY OF HENFIELD PROPERTY SAMPLING PERFORMED MAY 2-8, 1980
INORGANIC CONSTITUENTS[a,b]
W65125.00

Sample Number[a]	Sample Location/ Description	Ca	Mg	Na	Ag	Al	B	Ba	Be	Cd	Co	Cr	Cu
80-EW08S01	Water - Draining Ditch (ug/l)	211,000	56,700	253,000	< 3	< 90	204	70	< 1	< 2	< 5	34	19
80-EW08S02	Water - Brine Puddle (ug/l)	29,000,000	3,250,000	50,600,000	< 300	< 9,000	8,800	1,500	< 100	< 200	< 500	2,100	1,800
80-EW08S03	Water - Brine Puddle (ug/l)	29,000,000	3,290,000	48,600,000	600	< 9,000	8,800	1,500	< 100	< 200	< 500	2,200	1,700
80-EW08S04	Spill Sample From a Leaking Drum (ug/g)	< 600	200	< 100	< 0.3	470	< 9	770	< 0.1	< 0.2	< 0.6	1	3
80-EW-8S05	Spill Sample (ug/g)	56,900	6,600	< 1,200	< 3	23,000	< 80	110	2	3	< 5	52	530
80-EW08S06	Oil Spill Sample (ug/g)	27,400	7,100	100	0.4	11,000	21	310	0.8	2	1	33	450
80-EW08S07	Oil Spill Sample (ug/g)	48,000	20,200	37,300	< 3	132,000	240	94	1	10	< 5	130	630
80-EW08S08	Oil Spill Sample (ug/g)	3,200	400	3,400	< 0.3	1,800	< 8	13	< 0.1	< 0.2	3	300	360
80-EW08S09	Well Water (ug/l)	101,000	32,400	18,800	< 3	< 90	< 80	31	< 1	< 2	< 5	21	860
80-EW08S10	Well Water (ug/l)	68,400	20,300	13,000	< 3	< 90	< 80	27	< 1	< 2	< 5	13	26

Sample Number[a]	Sample Location/ Description	Fe	Mn	Mo	Ni	Pb	Sn	Ti	V	Y	Zn
80-EW08S01	Water - Draining Ditch	256	1,020	< 10	< 30	< 30	< 100	7	< 5	6	< 50
80-EW08S02	Water - Brine Puddle	81,000	60,100	< 1,000	< 3,000	5,600	< 10,000	< 600	600	1,500	11,300
80-EW08S03	Water - Brine Puddle	81,400	60,600	1,200	< 3,000	7,300	< 10,000	< 600	700	1,800	1,600
80-EW08S04	Spill Sample From a Leaking Drum	1,500	6	< 1	< 3	< 3	18	510	< 0.6	< 0.6	23
80-EW08S05	Spill Sample	22,000	570	36	< 30	260	< 100	220	19	7	480
80-EW08S06	Oil Spill Sample	17,000	540	19	28	200	37	160	15	6	390
80-EW08S07	Oil Spill Sample	14,000	1,500	200	31	400	170	1,600	69	< 5	590
80-EW08S08	Oil Spill Sample	3,100	52	5	. 100	33	16	43	3	< 0.5	59
80-EW08S09	Well Water	< 120	97	11	< 30	< 30	< 100	< 6	< 5	< 5	105
80-EW08S10	Well Water	221	36	13	< 30	< 30	< 100	< 6	< 5	< 5	2,350

NOTES:

[a] [b] Data from memorandum by Curtis Ross, U.S. EPA, Chief Central Regional Laboratory, August 4, 1980. (Document No. 01-05V25.0/0011).
Organic analysis reported the following:

80-EW08S02	Phenol	2,900 ppb	80-EW08S01	Total organics < 10 ppb
80-EW08S03	Phenol	2.6 ppb	80-EW08S09	Total organics < 10 ppb
80-EW08S06	PCB's	7 ppm	80-EW08S10	Total organics < 10 ppb

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Table C-3 (Page 1 of 2)
THE 50 HIGHEST CONCENTRATION ORGANIC COMPOUNDS
IDENTIFIED IN COMPOSITE SAMPLES COLLECTED FROM
76 DRUMS AT THE OLD MILL SITE ON
October 12, 1980[a]
W65125.00

	Compound	Concentration[b] mg/kg	Flash Point[c] °F	Notes
1.	1-Ethenyl-3-methylene cyclopentene	35549	-	
2.	G-nitro 2-picoline	22800	102	
3.	2-Propen-1-amine	15604	20	
4.	4-Methyl 2-pentanone	14132	-	
5.	2-Ethoxy -ethanol acetate	9438	-	
6.	Acetic Acid, Butylester	8613	72	
7.	Trichlorethene	7865	35	
8.	Tetrachloroethene	5130	-	
9.	Trimethyloxirane	5041	-	
10.	2-Propyl 1-Heptanol	4220	-	
11.	Miscellaneous Hydrocarbon	3145	-	
12.	Benzoic Acid, methyl ester	3140	-	
13.	Cyclohexane	3083	4.6	
14.	$C_{10}H_8$	2977	-	
15.	Anthracene	1403	250	
16.	2-Hexanone	1397	95	
17.	Decane	1288	115	
18.	2-Methyl Naphthalene	1104	-	
19.	Trichlorethane & Tetrachlorethane	1032	-	
20.	1,2-Dihydro-acenaphthylene	1010	-	
21.	Dibenzofuran (diphenyleneoxide)	828	-	
22.	(1-methylethyl) Benzene	784	-	
23.	Heptadecane	772	-	
24.	2-propyl-Heptanol	603	-	
25.	4-methyl Nonane	594	-	
26.	Phenol	588	175	
27.	4,5 dihydro-2,4-Dimethyl 1-H-Imidazole	583	-	
28.	1-Chloro-2-methyl benzene	574	126	
29.	1-Ethyl-3-methyl benzene	487	-	
30.	Fluoranthene	457	-	
31.	2-methyl naphthalene	427	-	
32.	Benzothiophene	380	-	
33.	1,1-Biphenyl	366	235	
34.	Pentocosane	360	-	
35.	Ethylcyclohexane	338	95	
36.	Pyrene	304	-	

	Compound	Concentration[b] mg/kg	Flash Point[c] °F	Notes
37.	2-6-Dimethylnonane	269	-	
38.	2,3-Dimethylpentane	266	20	
39.	1,2,4-Trimethyl Benzene	254	-	
40.	9-H Fluorene	235	-	
41.	2-Cyclohexyldecane	222	-	
42.	Phenanthrene	166	-	
43.	1-8 Dimethyl Naphthalene	166	-	
44.	3-Ethyl 2-methyl heptane	166	-	
45.	Heneicosane	149	-	
46.	4,8-Dimethylnonanol	145	-	
47.	6-methylheptyl ester 2-acrylic acid	136	-	
48.	2,6-Dimethyl Naphthalene	114	-	
49.	Isoquinoline	103	-	
50.	1-propenyl cyclohexane	100	-	

NOTES:

[a] Data from memorandum by Ken Harsh, OEPA, dated January 5, 1981. (Document No. 01-5V25.0/0088).

[b] Analysis by GC/MS. Concentrations are based on an approximate quantification standard (D_{10} Anthracene) which may differ from actual concentration by as much as 500 percent.

[c] Flash point method or reference not given.

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relatively nonvolatile, slightly water soluble, three- and four-ring compounds such as benzo(a)pyrene, chrysene, and indeno(1,2,3-c,d)pyrene.

During the same sampling effort on October 12, 1980, individual samples were taken from five drums and analyzed. These results indicate significant concentrations of phathalates, phenol, and several PAH compounds. The summary of analytical results is shown in Table C-4.

Results from flammability tests performed on three of the spill samples collected at the Henfield property on May 2-8, 1980, are shown in Table C-5. Based on these data and the flash point data (Table C-3), the fire hazard at the Old Mill site was established by Fredle.

In early 1982, analysis of a composite sample of four waste drums at the Henfield property revealed a mixture of organic compounds including PCB's at a total concentration of 625 mg/l. These results are summarized in Table C-6. The discovery of PCB's of over 500 ppm delayed waste removal while additional sampling and analysis of suspect wastes was conducted. Results of the analysis of 13 additional wastes for PCB's are summarized in Table C-7. These data show that several drums of waste had concentrations of PCB's over 500 ppm with 4 of the 13 reported concentrations 1,000 ppm or greater.

In response to the hospitalization incident with the sheriff's deputy in August (described in Section 2.2.2, Site History), four of the drums found on the Kraus property were sampled on September 14, 1982. Results of the analysis of these drums are presented in Table C-8. These wastes were removed from the Kraus property as part of the Superfund cleanup.

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Table C-4
SUMMARY OF OLD MILL SITE DRUM SAMPLING
PERFORMED OCTOBER 12, 1980, BY HARSH, OHIO EPA
W65125.00

Sample Number[a]	Sample Location/Description[a]	Compound(s) Identified[a]	Concentration[a] mg/kg
81-VK04S01	Oil Waste Drum	Naphthalene	8,900
		Acenaphthalene	2,250
		Di-n-butylphthalate	24,800
		Phenol	48,800
		Xylene (3 Isomers)	118,000
		1-Chloro-2-Methylbenzene	29,000
		2-Ethoxy-Ethanol Acetate	25,000
		Methylnaphthalene 2 (Isomers)	25,000
		Dibenzofuran	15,000
81-VK04S02	Hughson Chemical Drum	Naphthalene	88,200
		Acenaphthalene	3,900
		Acenapthene	31,400
		Fluorene	15,400
		Phenanthrene/Anthracene	111,700
		Fluoranthene	13,000
		Pyrene	13,200
		Methyl Naphthalene (2 Isomers)	140,000
		Dibenzofuran	35,000
81-VK04S03	Solvent Drum	Naphthalene	1,660
		Acenaphthene	400
		Phenanthrene/Anthracene	6,700
		Benzoic Acid, Methyl Ester	84,000
		Methyl Naphthalene (1 Isomer)	800
		Dibenzofuran	2,100
81-VK04S04	Resin Drum	Di-n-butylphthalate	3,387
		2, 6-BIS (1,1-Dimethylethyl) Phenol	174,000
81-VK04S05	Miscellaneous Drums	Naphthalene	3,021
		Acenaphthalene	647
		Acenaphthene	26.5
		Fluorene	582.8
		Phenanthrene/Anthracene	5,805
		Fluoranthene	733.7
		Pyrene	742.3
		Xylene (2 Isomers)	14,000
		Methylnaphthalene (2 Isomers)	7,500
		Dimethylnaphthalene (3 Isomers)	1,100
		Dibenzofuran	1,400

NOTES:
[a] Data from memorandum by Curtis Ross, Director Central Regional Laboratory, U.S. EPA, October 28, 1981; additional data from laboratory reports published in January 1981.

GLT405/13

Table C-5
SUMMARY OF FLAMMABILITY ANALYSIS ON SAMPLES FROM
OLD MILL SITE TAKEN
May 2-8, 1980[a]
W65125.00

Sample Number	Sample Description	Results
80-EW08S04	Spill sample from leaking drum (solid)	Readily ignitable and burned gently
80-EW08S05	Spill sample (solid)	Readily ignitable and burned gently
80-EW08S06	Oil spill sample (highly viscous)	Readily ignitable and burned vigorously

NOTE:

[a] Data from memorandum by Tayseer Gouda, U.S. EPA, Minerals/Nutrient Unit Inorganic Lab Section, June 3, 1980. (Document No. 01-5V25.0/0012).

GLT405/10

Table C-6
SUMMARY OF ORGANIC ANALYSIS OF COMPOSITE WASTE
SAMPLE TAKEN FROM FOUR DRUMS[a]
March 1982
Old Mill Site
W65125.00

Compound		Concentration, Percent by Weight
Xylene		72.1
1,1,1-trichloroethane		7.8
Tetrachloroethylene		4.6
Naphthalene		1.4
2-methyl naphthalene		1.2
1,2-dihydro acenaphthylene		1.6
Dibenzofuran		1.1
Anthracene		0.82
Phenanthrene		0.75
Fluoranthene		1.04
Pyrene		1.08
PCB's[b]	PCB 1242	325 mg/l
	PCB 1260	300 mg/l
	Total PCB's	625 mg/l

Notes:

[a]Composite consisted of 100 ml aliquots of each of the following samples:

Sample Designation	Date Received
Nonflammable Haolgenated	3/17/82
Rock Creek Nonflammable Chlorinated	3/17/82
Flammable Halogenated	3/26/82
Flammable Nonhalogenated	3/26/82

[b]PCB's determined using interim U.S. EPA method 8.4.

GLT405/33

Table C-7
ESTIMATED LEVELS OF PCB's FOUND IN DRUM SAMPLES
COLLECTED FROM THE OLD MILL SITE[a]
W65125.00

Drum Sample	Estimated PCB[b] Conc. (ppm)
13/D110	600
14/E21	1,500
15A/D166	500
15A/E188	1,000
20/C9	100
26/C505	50
26/C508	2,800
5/C80	50
5/D130	50
5/D39	50
5A/D151	1,200
8/E197	500
7/E208	<50

Notes:

a Data from memorandum dated 10/20/82 by Michael Urban, Analytical Chemist, Analytical Support Section, ERB.

b All PCB's detected were Aroclor 1260 except 5A/D151 which contained Aroclor 1242.

GLT405/36

Table C-8
SUMMARY OF ANALYSIS ON FOUR DRUM
SAMPLES TAKEN AT THE KRAUS PROPERTY
Rock Creek, Ohio
September 14, 1982
W65125.00

Sample Number	Compound(s) Identified	Concentration mg/kg
82-EF01S01	Ethylbenzene	34
	Methylene chloride	27
	Toluene	Detected at < 5
	2,2'-Oxybis ethanol	< 200
	1,2-benzendicarboxylic acid	< 80
	Styrene	< 8,000
82-EF01S02	Butyl benzyl phthalate	Detected at < 100
	Di-n-butyl phthalate	Detected at < 100
	Diethyl phthalate	Detected at < 100
	Ethyl benzene	18,000
	Methylene chloride	610
	Toluene	510
	Ethyldimetnyl benzene	3,000
	Ethylmethyl benzene	800
	Chlorhexylester-2-propenic acid	800
82-EF01S03	Phenol	Detected at < 100
	Naphthalene	Detected at < 100
	Bis-(2-ethylhexyl) phthalate	Detected at < 100
	Di-n-butyl phthalate	Detected at < 100
	Dimethyl phthalate	700
	Methylene chloride	60,000
	Ethyl formate	< 400
	Cellosolve acetate	< 3,000
	Ethylene glycol diacetate	< 800
	Styrene	< 1,000,000
82-EF01S04	2,4-dimethyl phenol	130
	Phenol	260
	Bis(2-ethylhexyl) phthalate	Detected at < 100
	Butyl benzyl phthalate	Detected at < 100
	Di-n-butyl phthalate	Detected at < 100
	Ethylbenzene	74,000
	Methylene chloride	61,000
	Toluene	200,000
	Butylesteracetic acid	1,000
	Ethyldimethyl benzene	4,000 to 6,000
	Ethylmethyl benzene	3,000
	Chromoethyl benzene	1,000
	Methyl heptyl ester of propenoic acid	1,000
	BHT	700
	4-Methyl-2-pentanone	< 250,000

Appendix D
ORGANIC COMPOUNDS TENTATIVELY IDENTIFIED
IN SOIL SAMPLES FROM THE HENFIELD PROPERTY
NOVEMBER 16, 1982

(Sample locations shown in Figure 2-6.)

see letter 2-9 & 2-? 2-7? which summarize

added to 11-16 ext results

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE: 82-EF02S 12

COMPOUND NAME	ESTIMATED CONCENTRATION MG/KG
Ethanone, 1-(2-hydrophenyl)-	87
Naphthalene, 1-methyl-	77
Naphthalene, 2,3-dimethyl-	99
Naphthalene, 1,4,6-trimethyl-/isomers	1300
Phenanthrene,3-methyl-	160
Naphthalene, 1-methyl-7-(1-methylethyl)-/isomers	1200
Phenanthrene, 2,3-dimethyl/isomer	380
Total Hydrocarbons	2100

put in a safe level

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE: 82-EF02S16

COMPOUND NAME	ESTIMATED CONCENTRATION MG/KG
Naphthalene, 1,4,5-trimethyl-	47
Total Hydrocarbons	3400

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE: 82-EFO2S 18

COMPOUND NAME	ESTIMATED CONCENTRATION MG/KG
Naphthalene, 1-methyl (2 isomers)	[illegible]
1,1'Biphenyl	[illegible]
Naphthalene, 2-ethyl-	[illegible]
Naphthalene, 1,3-dimethyl-(3 isomers)	[illegible]
Dibenzofuran	2300
Naphthalene, 1,4,6-trimethyl (3 isomers)	1260
9-H-Xanthene	610
Dibenzofuran,4-methyl	730
Dibenzothiophene	1060
9-H-Fluorene,9-Methylene-	4100
1H-Indene, 1-phenylmethylene-	530
Anthracene, 1-methyl-	1010
4H-cyclopenta(DEF)phenanthrene	1300
Naphthalene, 2-phenyl-	450
11H-Benzo(B)fluorene	410
Pyrene, methyl-(2 isomers)	700
Total Hydrocarbons	3200

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE: 82-EF02S 21

COMPOUND NAME	ESTIMATED CONCENTRATION MG/KG
Benzene, 1-ethyl-4-methyl-	200
Benzene,1-methyl-4-propyl	26
Benzoic Acid, methyl ester	1100
Naphthalene, 1-methyl-	87
Naphthalene, 2-methyl-	71
Naphthalene, 1,7-dimethyl-	73
Naphthalene, 1,8-dimethyl-	49
Naphthalene, 1,4,5-trimethyl-	24
Hydrocarbons (Total)	250

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE: 82-EF02S23

COMPOUND NAME	ESTIMATED CONCENTPATION MG/KG
Benzenesulfonic acid, 4-hydroxy-	590
Ethanone, 1-phenyl-	250
Ethanone, 1-(2-Hydroxyphenyl)-	1800
Naphthalene, methyl-(2 isomers)	870
1,1'-biphenyl-	140
Naphthalene, 2-ethyl-	79
Naphthalene, dimethyl-(3 isomers)	430
Total Hydrocarbons	650
Dibenzofuran	370

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE: 82-EF02S 28

COMPOUND NAME	ESTIMATED CONCENTRATION MG/KG
Benzene, 1-ethyl-2-methyl-	220
Benzene, 1,2,3-trimethyl-	180
Benzene, 1,2,4-trimethyl-	67
Benzene, 2-Propenyl-	34
Ethanone, 1-phenyl-	62
Benzene, 1,2,3,5-tetramethyl-	140
Benzene, 1-ethyl-2,4,5-trimethyl-	62
Naphthalene, 1-methyl-	49
Naphthalene, 2-methyl-	39
1,2-benzenedicarboxylic acid, butyl phenylmethyl ester	103
Hydrocarbon	62
Benzene, 4-ethyl-1,2-dimethyl-	210

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NUMBER: 82- EF02S29

COMPOUND NAME	ESTIMATED CONCENTRATION MG/KG
Naphthalene, 1,7-dimethyl -	25
Hydrocarbons (Total)	250

ORGANIC SCAN: DATA SET EDO-1929, OLD MILL STUDY - SEDIMENTS

TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE: 82-EFO2S 34

COMPOUND NAME	ESTIMATED CONCENTRATION MG/KG
Naphthalene, 1,2-dimethyl-	42
Hydrocarbons	510

OTHER VOLATILE COMPOUNDS TENTATIVELY IDENTIFIED

NAME	ESTIMATED CONCENTRATION, Mg/K
1- Hexanol	.44
8- Heptadecane, 1-chloro	4.10
Phenol, 4-(1,1-dimethylethyl)-	11.7
Hydro carbons	98.4

82 EF02 $29

OTHER VOLATILE COMPOUNDS TENTATIVELY IDENTIFIED

NAME	ESTIMATED CONCENTRATION, Mg/Kg
- Benzene, 1-chloro-3-methyl- (or isomer)	1.45

82EF02 R35

OTHER VOLATILE COMPOUNDS TENTATIVELY IDENTIFIED

NAME	ESTIMATED CONCENTRATION, PPB
Chloroethene	6.03
Tetrahydrofuran	1.08
Styrene	6.04

Appendix E
COMMUNITY RELATIONS PLAN

COMMUNITY RELATIONS PLAN

OLD MILL FACILITY

ROCK CREEK, OHIO

This stage I community relations plan outlines activities to be in conjunction with a Superfund remedial action (Remedial Investigation/Feasibility Study) at the Old Mill facility in Rock Creek, Ohio. U.S. EPA will have the lead responsibility for technical and community relations work, working in close cooperation with the Ohio EPA and other concerned state and local officials. This plan can be updated and revised in response to any events affecting the timetable for the project and/or citizen needs or concerns.

A. BACKGROUND AND KEY ISSUES

1. Facility History

The facility consists of a site located on Hill Street in Rock Creek, Ohio (Ashtabula County) owned by Ben Henfield, Inc. (filed bankruptcy) operated by Jack Webb and an adjacent area owned by Mr. Kraus. The facility, located near a number of residences and a school, includes an old grain elevator complex consisting of several old wooden structures and several silos. Mr. Webb's operation at the facility involved the use of solvents in the manufacture of potting soil. Peat moss was processed with a polymer and other materials. Webb also collected and had remaining on site about 1,250 55-gallon drums. During his operation he stored drums on the Kraus property, accumulating 52 drums there.

Numerous citizen complaints were received about odors from the site in 1980. Concerns were also voiced about the threat of fire and/or explosion.

Emergency Response team composite sampling of the drums in October 1980, revealed that many drums appeared to contain resins, solvents, and oils. Drums began leaking in 1981, causing chemical runoff to nearby small streams.

On November 6, 1981, $50,000 in immediate removal funds were allocated to accomplish the removal of flammable liquids from the Henfield property. During the next several weeks drum sampling and compatibility testing were undertaken. A severe winter caused freezing of the drums, making removal impossible. In addition, difficulties were encountered in locating disposal sites. However, by summer's end approximately 500 drums and their contents had been removed through the work with Ohio EPA and generators (companies considered responsible for waste generation or transportation; and/or owners and operators of the facility).

In July, 1980 results of analysis done on a composite sample of all drums left on the Henfield property showed 72% xylene and 625ppm PCBs.

Sampling was undertaken in September 1982 to determine which barrels contained PCBs and in what concentrations. Analyses indicated that over 50 drums contained PCBs in concentrations greater than 50ppm. Approximately $35,000 remained from the $50,000 obligation. It had become obvious that because of the presence and PCBs and the need to remove the 52 drums from the Kraus property, the removal action was going to require significantly more funds.

On September 20, 1982, a Regional Response Team meeting was convened in Ashtabula and the decision was made to request an additional $106,000 to complete a surface cleanup of the site.

On October 1, U.S. EPA announced approval of the funding request. Removal work, under the new obligation ceiling, began on October 4, and by October 19, all drummed material had been removed from the facility, (this included both the Henfield and Kraus property.)

2. Citizen Concern

Citizens in Ashtabula county have a high degree of interest in and experience with hazardous waste issues. (Laskin/Poplar Oil, Fields Brook, New Lyme Landfill, Big D Campground are other NPL facilities in Ashtabula county.) Local and Cleveland media coverage of hazardous waste issues has been extensive.

Rock Creek area residents became deeply frustrated with the delay in cleaning up the facility. The discovery of PCBs in the drummed material and the discovery of a pile of drums on the Kraus property, served to increase citizen concern. On September 12, 1982, eight residents living near the Krause property, were treated at a local hospital for flu-like symptons blamed on exposure to fumes from the Kraus property drums.

U.S. EPA met with residents on September 20 to inform them of the emergency funding request. Over 100 residents attended the meeting, together with local officials, including the mayor. Several Cleveland television stations and local press were also present. Although citizens were relieved to hear of the funding request, they openly expressed frustration with U.S. EPA and vowed "not to end their fight" until contaminated soil, the Kraus property, health questions, and additional information on precise chemicals on the facility were resolved to their satisfaction.

As soon as the funding request was approved, U.S. EPA notified a number of the September 20 meeting's attendees by telephone.

A community relations plan was implemented during the subsequent removal, geared toward communicating cleanup information directly to residents. Progress reports by telephone were given to severl of the active citizens during the project. A fact

sheet was prepared summarizing the removal action during November and a meeting was held with residents on December 15 to review the cleanup. In December following the analysis of some sampling of citizens' private well water, a sample of city tap water was found to contain elevated levels of trihalomethanes. Although not connected with the facility citizens initially believed there might be a relationship between the tap water sample, contaminants found in two private wells and the faciilty.

At a January 20,1983, meeting U.S.EPA held with residents, an Ohio EPA water quality official participated, explaining to attendees his work with local water supply officials to correct the drinking water problem. Ohio EPA's retesting of the private wells concerned, and the proposed U.S. EPA remedial investigation and feasibility study at the facility were explained. A fact sheet detailing water sampling results was distributed.

Citizens were pleased with the cleanup and Region V's efforts to work with them and keep them informed. A good working relationship was built with the community during the removal action and is expected to continue during the remedial project.

During the time period the Old Mill removal action was underway, a County Task Force was organized to serve as a focal point for dealing with the hazardous waste problem in the country. The membership consists of residents living near several of the country's facilities, including Old Mill, Laskin/Poplar Oil and Fields Brook, a county commissioner and county health department representative. Kathy Takacs and Mary Puchein represent the Old Mill facility on the Task Force. They will serve as the contacts for keeping the members informed about our actions at the facility.

Key Issues and Current Concerns

a) Much of the intensity of community concern has abated with the completed removal action. Rock Creek residents also seem to feel their concerns will be listened to by U.S. EPA. Recent rumors have been to circulating to the effect that the facility had been removed from the NPL. Citizens were reassured by Region V that such was not the case and that we were on schedule with necessary steps leading up to the RI/FS.

b) Residents are concerned about any potential long term health effects that might be associated with the facility. The Ohio Department of Health plans to follow up with reinterviewing citizens living near the facility.

c) Residents concerns now largely focus on the possible extent of any groundwater contamination. They are anxious to see the RI/FS get under way.

B. OBJECTIVES OF THE COMMUNITY RELATIONS PLAN

The objectives of the community relations plan are:

1. Ensure that accurate information is disseminated to the media, local officials and citizens on a timely basis.

2. Ensure that citizens have an opportunity to express concerns and ask questions before issues develop into controversies or become distorted through rumor or misinformation.

3. Present the affected community with the results of our remedial investigation as soon as possible following its conclusion and analysis. A clear explanation, in terms that can be understood by the community, of the remedial investigation results must be provided to the residents in both oral and written form at the time the report is released. (A community meeting will provide the forum for this.) The same procedure should be followed following the conclusion of the feasibility study, prior to the three week comment period.

4. Ensure the recently formed Ashtabula County Hazardous Waste Task Force is briefed informally on activities and progress as the project progresses.

5. Closely coordinate the release of information (particularly test results) with other involved agencies and ensure that local officials and any directly affected residents are notified prior to giving the information to the local media.

6. Convey a clear understanding of what can and can not be done--that is, the limitations, of Superfund so that the community has realistic expectations.

7. Preserve and build on the good working relationship we have achieved with the community. This county currently has five facilities on the NPL. Obviously, we and the other federal and state agencies involved will be conducting remedial action projects in this area for a considerable time. Any loss of credibility suffered as a result of poor community relations during this project will carry over to our efforts at the other facilities.

C. Community Relations Techniques

The following techniques are suggested to meet the objectives of this community relations plan:

Technique	Objective
1. Press Releases	To provide accurate and timely information to community and regional media regarding plans, status and developments throughout the RI/FS.
2. Fact Sheets	Provide a channel of factual information directly from U.S. EPA to all those persons interested and concerned about the facility. (Much information concerning the site and U.S. EPA's activity or intentions tends to surface as rumor in the community and local media has in the past used citizen interviews as a basis for stories. Coverage has been inaccurate at times.)
3. Community Meetings	Provide the community with an opportunity to meet face-to-face with the u.S. EPA and other involved state agency personnel to be briefed on remedial investigation findings, structure of feasibility study, findings of feasibility study, and selection of a final remedy. These meetings will also offer an opportunity for citizens to air their concerns, ideas and suggestions. The affected community will be provided a 3-week comment period following completion of the RI/FS to offer comments on the selected alternative.
4. Coordination with Ashtabula County Hazardous Waste Task Force	To ensure the Task Force is kept informed informed of plans and progress. This coordination will most likely be done informally by telephone.
5. Informal briefings and updates for local officials and citizens (by telephone)	Provide a direct link to U.S. EPA for citizens so that they have a focal point for exchanging information and expressing concerns. This approach has been used successfully over the past six months.

OLD MILL FACILITY COMMUNITY RELATIONS PLAN SCHEDULE

TECHNICAL ELEMENTS

Community Relations Activities	(7 months) Remedial Investigation *May, 83 June,July,Aug.,Oct., Nov.	(5 Months) Feasibility Study Dec., Jan, '84. Feb.March,Apr. Ma
PRESS RELEASE	*---------- * ---------- *---*	
FACT SHEET	*---additional, as required---- * ----------as required--- *----*	
	* *	
COMMUNITY MEETING	*---------- * meetings will be held if need arises *	
COORDINATION WITH ASHTABULA COUNTY TASK FORCE AND OTHER AGENCIES	----------Ongoing----------Ongoing----------	
INFORMAL BRIEFINGS AND UPDATES FOR LOCAL OFFICIALS & CITIZENS (PRIMARILY BY PHONE)	----------Ongoing----------Ongoing----------	

E. Staffing Plan for Community Relations Plan

* Date	Activity	Staff Responsibility	Workhours
5/1, 12/1	Press Releases	Robert Hartian	15
4/30, 6/15			
5/1, 12/1	Fact Sheets	M. Carlson	40
4/30, 6/15		G. Kulma	16
5/1, 12/1, 4/30	Community Meetings	M. Carlson U.S. EPA	75
6/15		G. Kulma, U.S. EPA	60
		L. Roggenkamp, OEPA	40
		R. Hannahs, OEPA	40
		Peter McCumiskey	60
Ongoing	(Coordination (with Ashtabula (County Task (Force and other (agencies.	(M. Carlson primary contact.) (Other U.S. EPA and OEPA staff as required.)	
Ongoing	(Briefings for (local offlcials (and citizens (by phone.	M. Carlson	

* Dates are approximate. They will be changed to coincide with technical activities as soon as more precise information is available regarding the schedule of work.

F. OFFICIALS, CITIZENS, MEDIA

Local Officials	Affiliation	Phone Numbers
Walter Brown	Mayor, Rock Creek	(216) 563-3257
Donald Dietrich	Morgan Township Trustee	(216) 563-3233
Peter Jansen	" " "	(216) 474-6000 or (216) 466-3835
Joseph Dirsh	" " "	(216) 563-3536 or (216) 563-3767
Robert Schultz	Rock Creek Village Councilman	(216) 563-3171
Kenneth Brown	" " " "(Mayor's son)	(216) 563-3257
Earl Collins	" " " "	(216) 563-5620
Mary Puchein	" " " "	(216) 563-3977
Walter Johnson	" " " "	
George Stoffel	" " " "	
James Timonere	Rock Creek Village Solicitor	
Charles Hart	Ashtabula County Health Dept.	
Chief Laverne Goodge	Morgan Volunteer Fire Dept.	
Dana Kincaid	Water Board	
Harold Christian	County Commissioner	
Peter Jaracci	County Commissioner	
Al Mackay	Contact for Ashtabula County Hazardous Waste Task Force County Commissioner	(216) 576-2040
Mike Wheeler	Ashtabula County Disaster Services Chief	
State Officials		
Roger Hannahs	OEPA, Div. of Hazardous Materials Mgmt. (DHMM)	(614) 462-6747
Deborah Berg	OEPA, Northeast District Office, Twinsburg	(216) 425-9171
Lorey Roggenkamp	OEPA, DHMM, Community Relations	(614) 462-6743
Robert Indian	Ohio Dept. of Health	(614) 466-0281
Federal Officials		
Gregg Kulma	U.S. EPA, OSC	(312) 886-6941
Richard Bartelt	U.S. EPA, Chief, Remedial Response Branch	(312) 353-9773
Marcia Carlson	U.S. EPA, Community Relations Coordinator	(312) 886-6873
M. E. Lynch	U.S. EPA, Congressional Liasional	(312) 353-3018
Dennis B. Eckert	U.S. Congressman	
Carol Haslett	Office of Congressman Eckart	(312) 522-2056
John Glenn	U.S. Senator	(216) 293-7095
Pat Bluso	Office of Senator Glenn	
Howard Metzenbaum	U.S. Senator	(216) 293-7272
Ladd Anthony	Office of Senator Metzenbaum	
Peter McCumisky	U.S. EPA/Center for Disease Control Liaison	(312) 886-3005

Non-responsive

Non-responsive

Appendix F
SITE VISIT HEALTH AND SAFETY PLAN

ECOLOGY AND ENVIRONMENT, INC.
R.E.M. FIELD INVESTIGATION TEAM
SITE SAFETY PLAN

A. GENERAL INFORMATION

SITE: Rock Creek/Old Mill/Jack Webb CH_2M HILL No: W65125.00
WSTS No: _____

LOCATION: Rock Creek, Ohio Ashtabula County
PLAN PREPARED BY: Peter J. Gorton DATE: 2/2/83
APPROVED BY: [signature] DATE: 2/4/83
OBJECTIVE(S): Preliminary RAMP to develop investigation procedures for remedial action - walk through survey. DATE: _____

PROPOSED DATE OF INVESTIGATION: Tues., Feb. 8, 1983
BACKGROUND REVIEW: Complete: X Preliminary: ____
DOCUMENTATION/SUMMARY: OVERALL HAZARD: Serious: ____ Moderate: ____
Low: X Unknown: ____

B. SITE/WASTE CHARACTERISTICS

WASTE TYPE(S): Liquid X Solid X Sludge X Gas ____
CHARACTERISTIC(S): Corrosive X Ignitable X Radioactive ____
Volatile X Toxic X Reactive ____ Unknown ____ Other (Name) ____

FACILITY DESCRIPTION: Old Mill - Manufacturing urea-formaldehyde white beads. Site also accepted drummed waste and performed waste reclamation.

Principal Disposal Method (type and location): Drum and tank storage.

Unusual Features (dike integrity, power lines, terrain, etc.) Flat old RR bed. Several (4) empty brick silos and (4) empty buildings.

Status: (active, inactive, unknown) Inactive
History: (Worker or non-worker injury; complaints from public; previous agency action): June 1979, 1st EPA inspection. Feb. 1980, drums from Kraus site moved to this site bringing total of 1,200 drums. Site closed June 1979. Groundwater study Jan. 1981 by K.B. Associates. TAT conducted compatibility tests and sampling of drums Nov. 1981. Cleanup started Sept. 1982 and completed Oct. 1982. All drums have been removed. Contaminated soil scraped into two piles, covered and may still remain on-site as two small piles

C. HAZARD EVALUATION

Site at one time had tanks, drums, and soil contamination. Major contamination was from PCBs, flammable solvents, paint wastes, solids contaminated with solvents and possibly acids. The site has been cleaned - drums and tanks removed, surface layer of soil scraped into 2 small piles, which were covered with plastic. These soil piles may still exist on site. Due to this cleanup activity, the overall hazard appears low. However, potentially hazardous areas on-site include: 1) on-site buildings and silos which are in disrepair and should be avoided, 2) soil piles if they have not been removed, 3) any puddles or standing water or stained soil, 4) conduit on S.W. corner of site. Strict contamination avoidance should be adhered to near these areas. Buildings and silos are not to be entered.

D. SITE SAFETY WORK PLAN

PERIMETER ESTABLISHMENT: Map/Sketch Attached X Site Secured: ____
Perimeter Identified? Yes Zone(s) of Contamination Identified? Yes
Potential contamination of groundwater and residential drinking wells.

PERSONAL PROTECTION
Level of Protection: A ____ B ____ C ____ D X
Modifications: Tyvek coveralls ultratwin respirators should be available and donned should odors exist (GMC-H cartridges). Surgical gloves, neoprene boots, hard hats, Robertshaw air escape mask.

Surveillance Equipment and Materials: HNU for continuous air monitoring. Any reading above background will necessitate air purifying respirator use.

DECONTAMINATION PROCEDURES: If work is conducted on-site, boots and other garments which have come into contact with potentially contaminated surfaces are to be thoroughly washed and rinsed at the hotline. The disposables, should be bagged, labeled, drummed and left on-site.

Special Equipment, Facilities, or Procedures
Detergent and rinse water
Wash tubs
Brushes
Disposables and equipment drop area

SITE ENTRY PROCEDURES: Enter fully dressed in modified Level D from an upwind direction and maintain contamination avoidance. Any activity other than a simple site walk through (e.g. sampling, entering on-site bldgs.) will require modification to this safety plan.

Team Member	Responsibility
Randy Videkowich	CH2M Hill - RSPO
John Fleisner	CH2M Hill
Tom Gilgenbach	CH2M Hill
Greg Kulma	U.S. EPA
1 - State personnel	

WORK LIMITATIONS (Time of day, etc.): Daylight hours; verify emergency routes and telephone numbers prior to site activity.

INVESTIGATION-DERIVED MATERIAL DISPOSAL: Will be properly labeled and disposed on-site. This includes boot covers, possibly gloves, and disposable coveralls, and cannisters if they come in contact with contaminated materials.

E. EMERGENCY INFORMATION
LOCAL RESOURCES

Ambulance Rock Creek Fire Dept., Rock Creek (216) 576-6600 or (216) 563-3333
Hospital Emergency Room Ashtabula General - (216) 998-3111
Poison Control Center
Police Rock Creek P.D. - (216) 576-4901 and (216) 576-0055 ✓
Fire Department Rock Creek Fire Dept. - (216) 563-3333 ✓
Airport Ashtabula County A.P.- (216) 275-3821 ✓
Explosives Unit
EPA Contact

SITE RESOURCES

Water Supply
Telephone Company adjacent to site and/or residential homes
Radio
Other

EMERGENCY CONTACTS

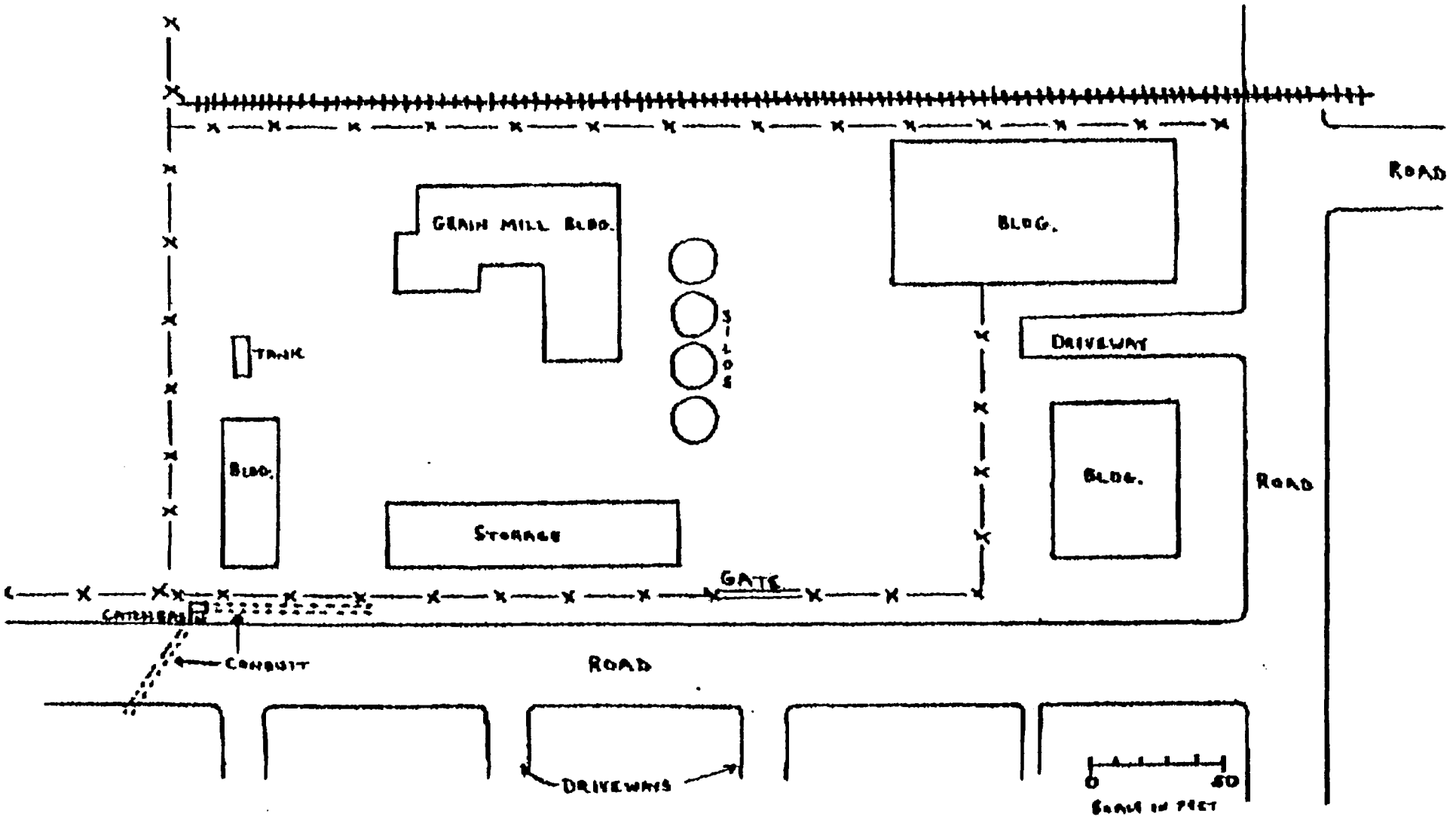
1. Dr. Raymond Harbison (University of Arkansas) (501) 661-5766 or 661-5767 (501) 370-8263 (24 hour)
2. Safety Coordinator/D. Dahlstrom (716) 632-4491 (Office) Non-responsive
3. RPT Leader
4. RPT Office
5. Ecology and Environment, Inc. NPMO . . .(703) 522-6065
6. Regional Health Maintenance Program Contact . . . . . .(414) 931-7600
7. Emergency Paging System . . . . . .(716) 882-2804
8.
9.
10.

F. EMERGENCY ROUTES
(Give road or other directions; attach map)

HOSPITAL: Address: 2420 Lake Avenue, Ashtabula

Emergency route to be established and driven prior to on-site activity.

OTHER:



OLD MILL SITE, ROCK CREEK, OHIO

REM/FIT EMERGENCY MED-TOX PLAN

FOREWORD

The purpose of this document is to explain the response mechanism within E & E for dealing with accidental injuries or chemical exposures which may occur in the course of REM/FIT work. All REM/FIT personnel are responsible for following the provisions of this plan as part of the Corporate Health and Safety Program. In addition, each regional FIT office will draw up emergency telephone contact lists where indicated in this plan and disseminate them to their team members. A copy of this plan should accompany each team when working in the field.

EMERGENCY MED-TOX SYSTEM

The emergency MED-TOX system consists of the following response elements:

(1) Field Team

(2) Local REM/FIT Office

(3) REM/FIT ZPMO

(4) E & E Corporate Headquarters

(5) MED-TOX Hotline

(6) Health and Safety Advisory Committee

Figure 1 summarizes the activation process for this system.

EMERGENCY ACTIONS

A. Types of Emergencies

Emergencies that may occur during REM/FIT work include physical injury caused by motor vehicle accidents, falls, fires, etc. and chemical exposures caused by splashes, reactions, etc. Such incidents may involve one person or many on the REM/FIT team and could potentially involve the public offsite. For example, a fire could generate a sudden cloud or toxic vapors or gases.

The level of mobilization of the corporate-wide MED-TOX system will depend on the severity of the injury or exposure. For example, a sprained ankle does not have to be reported to the respective ZPMO until it is convenient during normal business hours. Traumatic physical injuries are considered severe and thereby require immediate reporting when they result in:

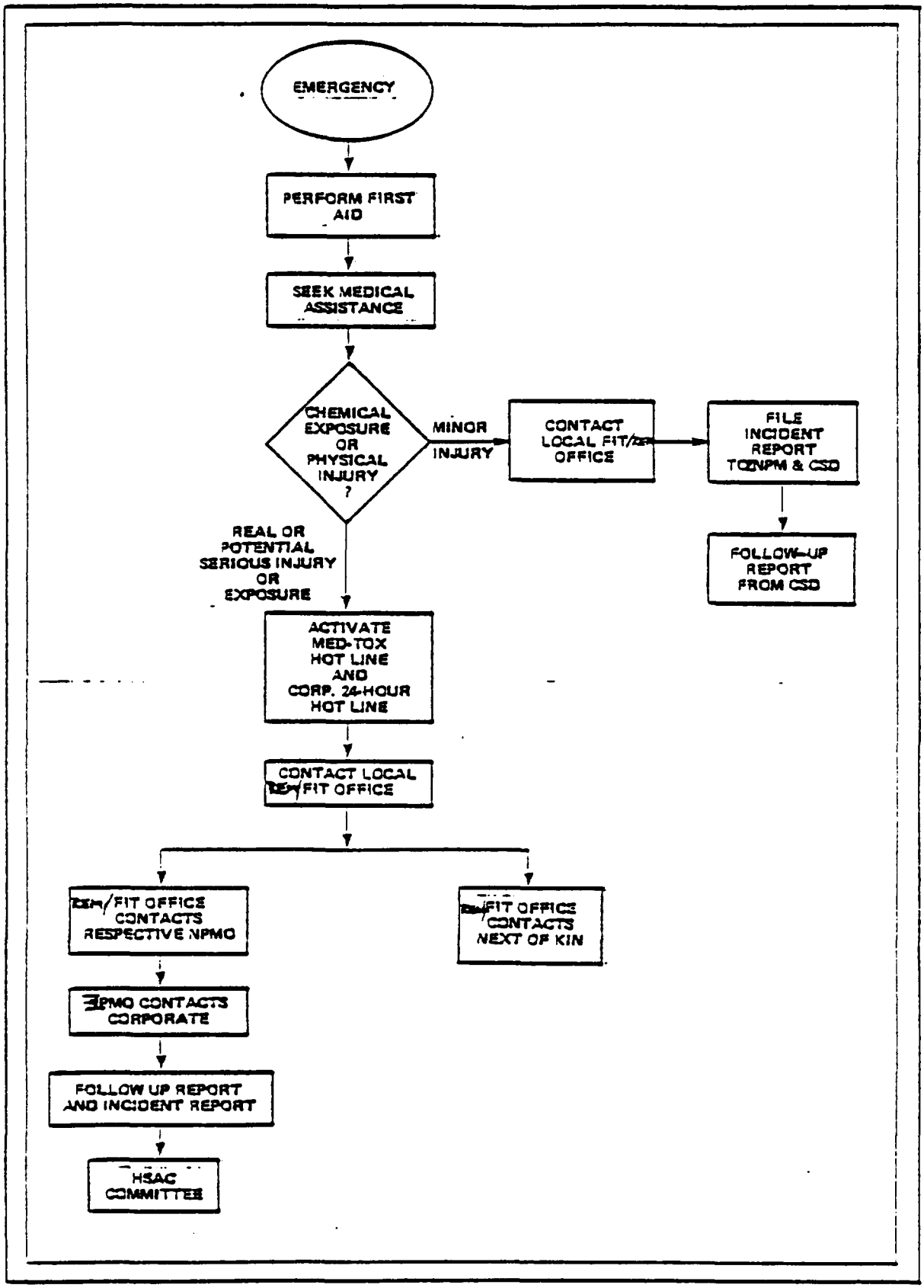


Figure 1 EMERGENCY MED–TOX SYSTEM

- o Death
- o Loss of consciousness
- o Medical treatment other than first aid

All Chemical exposures should be reported through the emergency system. However, any chemical exposure will be reported to the ZPMO as soon as possible after it occurs. The ZPMO will then decide whether it is necessary to pass the report on to corporate as an emergency or handle it through routine reporting procedures.

Responsibilities

B. (1) The REM/FIT project site leader at the work site has prime responsibility for activating the emergency MED-TOX system onsite. If he or she is unable to do so, the responsibiity will follow the order predetermined in the Site Safety Plan beginning with the Site Safety Officer. This person is responsible for:

(a) Initiating first aid (It may first be necessary to evacuate the person from the site if he is in imminent danger. Follow standard first aid procedure.) Normally the Site Safety Coordinator will be available to begin emergency first aid.

(b) Obtaining medical assistance by either transporting the victim to a hospital or medical center as determined under the Site Safety Plan, or obtaining an ambulance. The problem of contaminating medical assistance personnel must be considered.

(c) Activating the MED-TOX System in case of a chemical exposure or potential exposure.

(d) Contacting the local REM/FIT office

If no one is available to help, the project team leader will carry out the first two responsibilities first with the remaining two to be completed as soon as practical. All four actions may be carried out simultaneously if help is available.

(2) The REM/FIT Leader at the local office is the prime contact for the project team leader. If he is unavailable, the responsibility follows the following line:

(a) Assistant REM/FIT Leader

(c) Regional Safety Coordinator

The office contact is responsible for:

(a) Contacting the injured/exposed party's designated next-of-kin, with programmed information.

(b) Contacting the respective ZPMO with information updates.

(c) Setting up a command post in the office if necessary to monitor the situation and provide assistance as needed to the field team. The severity of the accident will indicate the degree to which the command post is operated.

(d) Acting as a clearing center for information on the accident, status of individual, background on site both to EPA and within the project.

(3) The respective ZPMO will provide any assistance required by the Regional office such as information on chemicals. The line of responsibility in the ZPMO follows this line:

(a) FIT

i) Assistant Zone Project Manager for Health and Safety (For FIT) D. Dahlstrom (Corp. Safety Director)

ii) Assistant Zone Project Manager for Technical Performance (For FIT) L. Welzel

(b) Remedial Programs (CH_2m Hill)

i) Corporate Safety Director (M. Chillingsworth)

ii) Assistant Zone Project Manager (REM) B. Agesteno

The ZPMO is responsible for:

(a) Contacting corporate headquarters

(b) Contacting EPA headquarters as necessary

(c) Serving as a clearinghouse for information for the regional office

(4) (d) Coordinating preparation of followup reports

E & E corporate headquarters will monitor incidents and bring the resources of the corporation to bear as needed. The callout line is:

(a) 24-hr call line

(b) Corporate Safety Director

(c) Assistant Corporate Safety Director (P. Gorton)

MED-TOX Hot-Line

A. The purpose of the MED-TOX Hot-Line is to provide the physician attending an E & E Ch_2M Hill employee who is exposed or injured:

(1) Toxicological information on the chemicals that may be involved

(2) Quick access to the individual's medical records for use in treating the person.

(3) A Communications Channel to Corporate Headquarters for further assistance.

8. The MED-TOX System is activated by the project site leader or other senior team member at the site of the exposure or injury A.S.A.P. This person calls

(501) 370-8263

which is a 24-hour line to an answering service. The answering service will contact one of three toxicologists in the MED-TOX System. (Drs. Raymond Harbison, Richard Freeman, or Morris Cramer.) One of these Toxicologists will contact you.

C. When the first call is made to MED-TOX, give the person answering the following information:

(1) State: This is an emergency

(2) Your name and region

(3) Telephone number to reach you

(4) Your location

(5) Name of person injured or exposed

(6) Nature of emergency

Give the same information to the toxicologist calling back, and answer any questions he has.

D. If the toxicologist does not return your call within 15 minutes, call the Corporate 24-hour pager for assistance and then go to the following callout list for toxicological information at E & E headquarters in Buffalo. Start with the first and continue calling them in order until contact is made:

LIST OF TELEPHONE NUMBERS

Regional Office

Office Phone Number: _____

	Name	Home
Team Leader		
Assistant Team Leader		
Regional Safety Coordinator		

REM/FIT NATIONAL ZONE MANAGEMENT OFFICES

Office Phone Number: (703) 522-6065, FIT) (303)620-5200, REM)

	Name	Home	Office
Assistant Zone Project Manager for Health and Safety	David Dahlstrom	Non-responsive	(716)632-4491
CH_2M Hill's Corporate Safety Director	Mary Anne Chillinsworth		
Assistant Zone Project Manager (FIT)	Roger Gray	Non-responsive	
Assistant Zone Project Manager (REM)	Bob D'Agasteno		

E & E CORPORATE HEADQUARTERS

Office Phone Number: (716) 632-4491

	Name	Home
Corporate Safety Director	David Dahlstrom	Non-responsive
Assistant Corporate Safety Director	Peter Gorton	
Vice President for Special Projects	Gerry Gallagher	
24-hour call line	(716) 882-2804	

		Office	Home
		(EST to 8:30-5:30)	
(1)	David Dahlstrom	(716) 632-4491	(7[redacted]
(2)	Dr. Edward Carr	(716) 831-2803	(7[redacted]
(3)	Dr. James Nolan	(716) 398-4814	(7[redacted]

WHAT TO REPORT

In all cases of contact made in the chain of reporting within E & E, the following information will be the minimum provided:

1. Name and REM/FIT region of person making call
2. Telephone number and location of person making call
3. Name of person(s) exposed or injured
4. Nature of emergency
5. Actions taken

DEALING WITH THE PRESS

If an accident attracts the attention of the media, and if EPA has an OSC,direct all media contact to him. If an OSC is not present, direct all media contact to the respective REM/FIT ZPMO. Nothing is to be said about the cause of the incident, the people involved, or the extent of injury or exposure.

INCIDENT REPORTS

Any exposure or injury to REM/FIT personnel will require that an incident report be filed by the affected individual. In addition, the person in charge at each reporting level will prepare a report on the actions taken at his/her location during the emergency and followup. This report will be submitted to E & E Corporate Safety Director for collection and preparation of the final report on the incident.

Appendix G
MEMORANDUM - DEPARTMENT HEALTH AND HUMAN SERVICES
JANUARY 14, 1983

01-5125.01 0044

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control

Memorandum

January 14, 1983

From Chief, Superfund Implementation Group, CEH

Subject Old Mill Site, Rock Creek, Ohio

To Peter McCumiskey
Public Health Advisor, Region 5

At your request, the data you submitted regarding the above site has been reviewed by a committee of the Center for Environmental Health, Centers for Disease Control. I hope that the comments will be helpful.

Since the site is one of two to be visited later in the month by Dr. Edith Welty of this Center, the comments in this memorandum should be considered preliminary in nature. After Dr. Welty has had the opportunity to view the site and talk with those concerned, we will review and if appropriate, alter our recommendations. Two other caveats should be made: 1) since there was no quality control information supplied with the data, it was assumed that all samples were collected and laboratory tests performed in a manner that is approved by and acceptable to EPA; and 2) there were no recommendations made concerning the village water supply since it is our understanding that this situation has been under active review by several other agencies.

The general consensus of the committee was that no emergency action was apparently necessary at this site. That said, however, it should also be noted that additional data is required to fully define any potential hazard to the public health. Because of the demonstrated presence of chemicals in the soil surrounding the site as well as very high levels of contamination within the Old Mill site itself, and the fact that flow of surface water appears to be in various directions, it would seem prudent to test the private wells surrounding the site (particularly those located to the north and south, and any that are suspected of being used for drinking purposes) to see if contamination is present. Also of interest would be analyses of samples of water and sediment from the streams that are connected with these two sites and studies to determine whether these streams support life. This would allow better definition of the extent of contamination and thus of any human health hazard.

The phthalates present in the water samples present no real risk to the population. The levels of the phthalate esters found on November 17, 1982 were all in the ppb range and below the applicable WQC levels.

The contaminant levels found in soil at the Old Mill site has to be considered as presenting a health risk based on the significantly high levels of inorganics found at the November 17 sampling, and several of the soil samples showing levels of known organic carcinogens such as benzo (a) pyrene and benzo (b) fluoranthene. Chrysene was also shown to be present in the sump of one of the residences near the site. Therefore, since hydrologic data was not presented, the potential threat to groundwater contamination cannot be determined. Since skin contact can be a significant route of exposure, it was assumed by the committee that the site is not accessible to the general public. If this is not true, then it would be appropriate to develop plans to secure the site at an early date.

In summary, although no apparent imminent hazard to health is present, EPA should clarify which local wells could be subject to increased groundwater contamination in the future because of the well depth, well encasement, groundwater flow direction, subsurface permeability and proximity to the Old Mill site soils. Additional environmental sampling should also be done in the drainage areas of both the new drum site and the Old Mill site.

We will be happy to review any future data obtained on these sites and will be receiving information from Dr. Welty after she returns. If we can be of further help in the meantime, please let us know.

Georgi A. Jones

U.S. ENVIRONMENTAL PROTECTION AGENCY - CLP Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313 - 703/557-2490

Sample Number

ORGANICS ANALYSIS DATA SHEET

Laboratory Name: _____ Case No: _____

Lab Sample I.D. No: _____ QC Report No: _____

Multiply Detection Limits by 1 ☐ or 10 ☐ (Check Box for Appropriate Factor)

ACID COMPOUNDS

PP #	CAS #		ug/l or ug/kg (circle one)
(21A)	88-06-2	2,4,6- trichlorophenol	
(22A)	59-50-7	p-chloro-m-cresol	
(24A)	95-57-8	2- chlorophenol	
(31A)	120-83-2	2,4-dichlorophenol	
(34A)	105-67-9	2,4-dimethylphenol	
(57A)	88-75-5	2- nitrophenol	
(58A)	100-02-7	4-nitrophenol	
(59A)	51-28-5	2,4-dinitrophenol	
(60A)	534-52-1	4,6-dinitro-2-methylphenol	
(64A)	87-86-5	pentachlorophenol	
(65A)	108-95-2	phenol	

BASE/NEUTRAL COMPOUNDS

(1B)	83-32-9	acenaphthene	
(5B)	92-87-5	benzidine	
(8B)	120-82-1	1,2,4-trichlorobenzene	
(9B)	118-74-1	hexachlorobenzene	
(12B)	67-72-1	hexachloroethane	
(18B)	111-44-4	bis(2-chloroethyl)ether	
(20B)	91-58-7	2-chloronaphthalene	
(25B)	95-50-1	1,2-dichlorobenzene	
(26B)	541-73-1	1,3-dichlorobenzene	
(27B)	106-46-7	1,4-dichlorobenzene	
(28B)	91-94-1	3,3'-dichlorobenzidine	
(35B)	121-14-2	2,4-dinitrotoluene	
(36B)	606-20-2	2,6-dinitrotoluene	
(37B)	122-66-7	1,2-diphenylhydrazine	
(39B)	206-44-0	fluoranthene	
(40B)	7005-72-3	4-chlorophenyl phenyl ether	
(41B)	101-55-3	4-bromophenyl phenyl ether	
(42B)	39638-32-9	bis (2-chloroisopropyl) ether	
(43B)	111-91-1	bis (2-chloroethoxy) methane	
(52B)	87-68-3	hexachlorobutadiene	
(53B)	77-47-4	hexachlorocyclopentadiene	
(54B)	78-59-1	isophorone	
(55B)	91-20-3	naphthalene	
(56B)	98-95-3	nitrobenzene	
(62B)	86-30-6	N-nitrosodiphenylamine	
(63B)	621-64-7	N-nitrosodipropylamine	
(66B)	117-81-7	bis (2-ethylhexyl) phthalate	
(67B)	85-68-7	benzyl butyl phthalate	
(68B)	84-74-2	di-n-butyl phthalate	
(69B)	117-84-0	di-n-octyl phthalate	
(70B)	84-66-2	diethyl phthalate	
(71B)	131-11-3	dimethyl phthalate	
(72B)	56-55-3	benzo(a)anthracene	

BASE/NEUTRAL COMPOUNDS

PP #	CAS #		ug/l or ug/kg (circle one)
(73B)	50-32-8	benzo(a)pyrene	
(74B)	205-99-2	benzo(b)fluoranthene	
(75B)	207-08-9	benzo(k)fluoranthene	
(76B)	218-01-9	chrysene	
(77B)	208-96-8	acenaphthylene	
(78B)	120-12-7	anthracene	
(79B)	191-24-2	benzo(ghi)perylene	
(80B)	86-73-7	fluorene	
(81B)	85-01-8	phenanthrene	
(82B)	53-70-3	dibenzo(a,h)anthracene	
(83B)	193-39-5	indeno(1,2,3-cd)pyrene	
(84B)	129-00-0	pyrene	

VOLATILES

(2V)	107-02-8	acrolein
(3V)	107-13-1	acrylonitrile
(4V)	71-43-2	benzene
(6V)	56-23-5	carbon tetrachloride
(7V)	108-90-7	chlorobenzene
(10V)	107-06-2	1,2-dichloroethane
(11V)	71-55-6	1,1,1-trichloroethane
(13V)	75-34-3	1,1-dichloroethane
(14V)	79-00-5	1,1,2-trichloroethane
(15V)	79-34-5	1,1,2,2-tetrachloroethane
(16V)	75-00-3	chloroethane
(19V)	110-75-8	2-chloroethylvinyl ether
(23V)	67-66-3	chloroform
(29V)	75-35-4	1,1-dichloroethene
(30V)	156-60-5	trans-1,2-dichloroethene
(32V)	78-87-5	1,2-dichloropropane
(33V)	10061-02-6	trans-1,3-dichloropropene
	10061-01-05	cis-1,3-dichloropropene
(38V)	100-41-4	ethylbenzene
(44V)	75-09-2	methylene chloride
(45V)	74-87-3	chloromethane
(46V)	74-83-9	bromomethane
(47V)	75-25-2	bromoform
(48V)	75-27-4	bromodichloromethane
(49V)	75-69-4	fluorotrichloromethane
(50V)	75-71-8	dichlorodifluoromethane
(51V)	124-48-1	chlorodibromomethane
(85V)	127-18-4	tetrachloroethene
(86V)	108-88-3	toluene
(87V)	79-01-6	trichloroethene
(88V)	75-01-4	vinyl chloride

4/82

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.

INORGANICS ANALYSIS DATA SHEET

LAB NAME _____ CASE NO. _____

LAB SAMPLE ID. NO. _____ QC REPORT NO. _____

TASK 1 (Elements to be Identified and Measured)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum		10.	Zinc	
2.	Chromium		11.	Boron	
3.	Barium		12.	Vanadium	
4.	Beryllium		13.	Silver	
5.	Cobalt				
6.	Copper				
7.	Iron				
8.	Nickel				
9.	Manganese				

TASK 2 (Elements to be Identified and Measured)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Arsenic		5.	Mercury	
2.	Antimony		6.	Tin	
3.	Selenium		7.	Cadmium	
4.	Thallium		8.	Lead	

TASK 3 (Elements to be Identified and Measured)

		ug/l or mg/kg (circle one)
1.	Ammonia	
2.	Cyanide	
3.	Sulfide	

COMMENTS:

ORGANICS ANALYSIS DATA SHEET - Page 2

Sample Number

Laboratory Name: _____ Case No: _____

Lab Sample I.D. No: _____ QC Report No: _____

Multiply Detection Limits by 1 ☐ or 10 ☐ (Check Box for Appropriate Factor)

PESTICIDES

PP #	CAS #		ug/l or ug/kg (circle one)
(89P)	309-00-2	aldrin	
(90P)	60-57-1	dieldrin	
(91P)	57-74-9	chlordane	
(92P)	50-29-3	4,4'-DDT	
(93P)	72-55-9	4,4'-DDE	
(94P)	72-54-8	4,4'-DDD	
(95P)	115-29-7	α-endosulfan	
(96P)	115-29-7	β-endosulfan	
(97P)	1031-07-8	endosulfan sulfate	
(98P)	72-20-8	endrin	
(99P)	7421-93-4	endrin aldehyde	
(100P)	76-44-8	heptachlor	
(101P)	1024-57-3	heptachlor epoxide	
(102P)	319-84-6	α-BHC	

PESTICIDES

PP #	CAS #		ug/l or ug/kg (circle one)
(103P)	319-85-7	β-BHC	
(104P)	319-86-8	δ-BHC	
(105P)	58-89-9	γ-BHC (lindane)	
(106P)	53469-21-9	PCB-1242	
(107P)	11097-69-1	PCB-1254	
(108P)	11104-28-2	PCB-1221	
(109P)	11141-16-5	PCB-1232	
(110P)	12672-29-6	PCB-1248	
(111P)	11096-82-5	PCB-1260	
(112P)	12674-11-2	PCB-1016	
(113P)	8001-35-2	toxaphene	

DIOXINS

(129B)	1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin	

Non-Priority Pollutant Hazardous Substances List Compounds

ACID COMPOUNDS

CAS #		ug/l or ug/kg (circle one)
65-85-0	benzoic acid	
95-48-7	2-methylphenol	
108-39-4	4-methylphenol	
95-95-4	2,4,5-trichlorophenol	

BASE/NEUTRAL COMPOUNDS

62-53-3	aniline	
100-51-6	benzyl alcohol	
106-47-8	4-chloroaniline	
132-64-9	dibenzofuran	
91-57-6	2-methylnaphthalene	
88-74-4	2-nitroaniline	
99-09-2	3-nitroaniline	
100-01-6	4-nitroaniline	

VOLATILES

CAS #		ug/l or ug/kg (circle one)
67-64-1	acetone	
78-93-3	2-butanone	
75-15-0	carbondisulfide	
519-78-6	2-hexanone	
108-10-1	4-methyl-2-pentanone	
100-42-5	styrene	
108-05-4	vinyl acetate	
95-47-6	o-xylene	

Appendix H
U.S. EPA CONTRACT LABORATORY PROGRAM (CLP)
SCHEDULE FOR ROUTINE
ORGANIC AND INORGANIC ANALYSIS